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UNIVERSITY OF ALBERTA

AN INVESTIGATION INTO THE ENVIRONMENTAL ATTITUDES AND BEHAVIORS OF GRADE EIGHT STUDENTS

BY

CAROL ELIZABETH SHERLOCK ©

A thesis submitted to the faculty of Graduate Studies and Research in
partial fulfillment of the requirements for the degree of
MASTER OF ARTS

DEPARTMENT OF PHYSICAL EDUCATION AND SPORTS STUDIES

Edmonton, Alberta

FALL, 1995

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While we are born with curiosity and wonder
and our early years full of the adventure they bring,
I know such inherent joys are often lost.
I also know that, being deep within us,
their latent glow can be fanned to flame again
by awareness and an open mind.

- Sigurd Olson

University of Alberta

Faculty of Graduate Studies and Research

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled An Investigation into the Environmental Attitudes and Behaviors of Grade Eight Students submitted by Carol Elizabeth Sherlock in partial fulfillment of the requirements for the degree of Master of Arts.

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Larry Beauchamp Ph.D.

Debra Shogan Ph.D.

Aug 18/95

To the children who shared their experiences

ABSTRACT

In recent years it has become increasingly apparent that we are acting in ways destructive to the Earth. We have lost our sense of place within the natural scheme of things. If we are to heal our planet and ourselves we must begin to recognize the consequences of our personal action or inaction.

This study has undertaken an investigation into how grade eight students form and change environmental attitudes and behaviors, and the meaning they attribute to this experience. Five case studies are presented which portray the lived experiences of the adolescents involved. Information collected through the use of personal journals and sharing circles provided insights into the unique experiences of individual students as well as a basis from which to generalize commonalities among these five experiences.

The dominant themes revealed by the participants included: Personal Responsibility for the Earth; Feeling of Control Over Actions; Previous Involvement in Positive Environmental Behavior; Assessment of Personal Environmental Behavior; Appreciation of Nature; Meaning, Fun, and Experiential Learning; Family Influence; Influence of a Positive Environmental Role Model; Peer Pressure; and Influence of Media. Each theme is discussed according to its influence on the attitudes and behavior of the students. Finally, the thesis concludes with a discussion of the need for qualitative research in environmental education and gives recommendations for improving the commitment to environmental action within adolescents.

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CHAPTER I: INTRODUCTION

"Come forth
into the light of things.
Let Nature be your
teacher."

-William Wordsworth

This study is inspired by my love for the Earth and a desire to share this fascination with others. A love for nature was instilled in me from an early age. My father shared the natural world with us (my mom, my sisters, and my brother) on hikes through the temperate rain forests of Vancouver Island. We had the opportunity to explore the woods and come to know the plants and animals which lived there. Summers were spent camping and travelling from one end of this great country to the other. However, in my adolescence I lost touch with the natural world and an important part of myself. In fact, it wasn't until I was in my mid-twenties that I re-established my connection with nature.

As an educator, I feel the most important learning which can be imparted to children has to do with the Earth and our personal relationship with it, and with ourselves. Only through direct experience with the natural world can the wonder of it be realized. It is my aspiration to share this wonder with my students so that they might be encouraged to save the Earth, we as humans, are so bent upon destroying.

As we prepare to enter the twenty-first century upon a wave of unprecedented technological advancement, we carry on our backs a disillusioned youth. "Schools still perpetuate convenient myths to reassure the majority, including the notion that science and technology have somehow made our lives easier and richer" (Smith, 1989, p. 21). Technology is looked to as the solution and the spiritual relationship which exists between humans and the Earth is overlooked. Perceptions are disoriented and anthropocentric values dominate learning. "Education is not seen as an end in itself but rather as a means to something else, something grander - namely, success" (Webb & Sherman, 1989, p. 72). Our task must be to educate future generations "to a new way of being in the world . . . because the philosophy of humanism is not enough to save humanity" (DeFaveri, 1986, p. 222).

Aim Of The Study

This study has undertaken an investigation into how adolescents form and change environmental attitudes and behaviors, and the meaning they attribute to this experience. The inherent interrelationship between attitude and behavior suggests that they be explored concurrently rather than individually. It is difficult to separate attitudes from behaviors because they do not exist in isolation.

My role as researcher is influenced by the fact that I am a teacher. I am a "researcher oriented to the world in a pedagogic way" (Van Manen, 1990, p. 151). My commitment to pedagogy requires understanding the real world of the adolescent so I might live my life with them more fully. Human science researcher cannot be separated from educator, nor would I want it to be.

My interest in the field of environmental and outdoor education was peaked in 1991. The University of Alberta offered an Environmental and Outdoor Education Leadership School as an inservice opportunity for teachers involved in the delivery of the New Junior High Environmental and Outdoor Education Curriculum. Involvement in the summer leadership course naturally led to conversations with teachers currently implementing the new course of studies. Concerns were raised regarding the development of commitment to positive environmental action within students. It didn't seem to be happening. Because of its focus on the commitment to positive environmental action within adolescents, this program seemed an ideal location for my study.

The Junior High Environmental And Outdoor Education Program

The new junior high environmental and outdoor education course is offered as an option, and was designed to replace outdoor education within the junior high school curriculum. This activity-based program focuses on practical learning experiences and personal and group responsibility and decision making. The course is organized into six elements: Outdoor Core, Personal and Group Development, Environmental Core, Outdoor Expeditions, Environmental Investigations, and Commitment to Action. The six elements are divided into three strands: Outdoor, Personal and Group Development, and Environmental strands. Each strand is developed over three levels of experience. These include, the Foundation Level, the Exploration Level, and the Empowerment Level. At the Foundation Level students assimilate the basic knowledge, skills, and attitudes that will become the basis for learning in later levels. The Exploration Level offers students the opportunity to apply the knowledge, skills, and attitudes acquired at the Foundation Level in real-life situations. Finally, at the

Empowerment Level students incorporate their school experiences into their personal lives (Alberta Education, 1991).

Because registration in this course requires no prerequisite, students involved in this study were either in their first or second year of the program.

Definition Of Terms

The definition of key terms used in this study will be based on those found within the Junior High Environmental and Outdoor Education Teacher Resource Manual (1991). Terms which are not defined within the curriculum will be defined by the researcher.

Definitions

Positive environmental attitudes - Values and beliefs about nature which are non-dominating and non-hierarchical and acknowledge the intrinsic value of the non-human world.

Positive environmental behavior - Actions towards the environment which reflect harmony with nature.

Commitment to action - A commitment to changing personal habits and choices so that individual actions are supportive of, rather than destructive to, the natural environment.

Environmental awareness - An understanding of human kind's interdependence on the Earth and of the consequences of this interdependence.

Environmental knowledge - An understanding of basic ecological concepts (the Earth's cycles and systems), in-depth knowledge of environmental problems and issues, and knowledge of environmental action strategies.

Experiential education - Learning through direct experience with the subject matter. "Experience alone is insufficient to be called experiential education . . . it is the reflection process which turns experience into experiential education" (Joplin, 1981, p. 17).

Reflection - "Reflection is an important human activity in which people recapture their experience, think about it, mull it over, and evaluate it. Reflection in the context of learning is a generic term for those intellectual and affective activities [that] lead to new understandings and appreciations" (Boud, Keogh, & Walker, 1985, p. 19).

Overview Of The Thesis

Chapter Two is a review of the existing literature on the formation and change of environmental attitudes and behavior, as well as research in related areas.

Chapter Three provides details of the methodology and method. The virtue of qualitative research is presented and a discussion of validity, reliability, generalizability, and ethical considerations ensues. The research method is explained in detail including the identification of the research participants, and a discussion of the research procedure including, bracketing of personal bias, data analysis, thematic analysis, and a description of the written synthesis.

Chapter Four introduces the study participants and presents the findings for each. The data in this section were analyzed according to the method explained in Chapter Three.

Chapter Five relates the common experience. This is a discussion of the common themes arising out of individual experiences. These themes form the basis for the thesis.

Chapter Six includes a discussion of the need for qualitative research in environmental education, provides reflection on the research, and concludes with some recommendations which may contribute to the development of commitment to positive environmental action.

CHAPTER II:
REVIEW OF LITERATURE

Synoptic Overview

Current research into factors influencing the formation and change of environmental attitudes and behaviors has been predominantly positivist in nature. Though "no research paradigm has a monopoly on quality" (Peshkin, 1993, p. 28), this omission has created a certain lack of depth in the nature of the phenomenon. Factors which determine whether or not an individual will act in an environmentally positive regard are often personal and situational. This necessitates the selection of a methodology capable of providing the researcher with richly articulated descriptions of the participant's personal experience.

The reader will be guided through the existing literature alongside Jeannie Baker's young protagonist from her extraordinary children's story Where the Forest Meets the Sea (1987). The reader will have the opportunity of gaining insight into the lived experience of the protagonist as he discovers the natural world.

The review will be organized as follows. First a review of literature examining the value of the natural world. This perspective seemed a necessary point of departure from which to present my argument. The review next explores a sense of place, followed by the influence of a positive environmental role model. Adolescents and their quest for self was investigated in-depth, as this provided a basis from which to discuss the many societal influences affecting attitudinal and behavioral change. The review then discusses experience in the natural world at an early age, followed by direct experience with nature. An examination of experiential learning is proceeded by a look at the influence of environmental knowledge. Finally, personal responsibility for the Earth will be reviewed and the aims of the present research reiterated.

The Value of the Natural World

> *Jeannie Baker takes the reader on a visit to a tropical rain forest in North Queensland, Australia. An area and people threatened by civilization. An exotic, primeval wilderness where 296,000 acres of tropical rain forest meet the ocean waters of the Great Barrier Reef. A wilderness like so many others, now threatened by progress (Baker, 1987).*

Western society has traditionally looked at the natural world as a collection of limitless resources to exploit. This anthropocentric worldview has been encouraged by Judaeo-Christian tradition which depicts human dominion over nature. "The assumptions behind the traditional Western worldview are that we are makers of our own destiny; that our history has been a history of progress; that whatever problems we encounter in the future, we will be able to solve them" (Marshall, 1992, p. 5). In recent years, threats to global sustainability have fueled a fundamental shift in ecological consciousness. In order to solve existing environmental problems "a new vision of the world is emerging which recognizes the interrelatedness of all things and beings and which presents humanity as an integral part of the organic whole" (Marshall, 1992, p. 5). This new ecological paradigm has developed the insights of ancient religions and philosophies, but is also substantiated by modern physics and the science of ecology (Marshall, 1992). Environmentalists agree that until we begin to view the world as a series of interrelationships of which we are merely a part, there can be little hope for the survival of this planet. Although a "handful of historians and philosophers have begun to sketch the outlines of a green cultural and intellectual tradition (ie. Deep Ecology, Social Ecology, Eco-Feminism, etc.), as yet no comprehensive overview has appeared" (Marshall, 1992, p. 6).

A Sense Of Place

> *The story begins . . .*
>
> *"My father knows a place we can only reach by boat.*
> *Not many people go there,*
> *and you have to know the way through the reef".*

According to Gussow (in Van Matre and Weiler, 1983) though we require environments to sustain our bodies, we also require them to support our spirits. "A place is a piece of the whole environment claimed by feelings" (p. 45). These "places" become part of us, part of our associations, part of our memories. For example, we would never speak of going to spend time in the environment. It is the places known intimately to us, we recall. The sights, the sounds, the smells, etched forever in our memories.

Wallace Stegner spoke eloquently of a lifetime of special places. The following quotation is a remembrance from his childhood:

> And I remember that evening spent on the big empty plains . . . In June of 1915 my father took my brother and me with him in the wagon across fifty miles of unpeopled prairie to build a house on our homestead . . . We lunched beside a

> slough where in the shallow water we ignorantly chased and captured a couple baby mallards. Before I let mine go, I felt the thumping of that wild little heart in my hands, and that taught me something too . . . Night overtook us and we camped on the trail . . . then in the night I awoke, not knowing where I was. Strangeness flowed around me; there was a current of cool air, a whispering, a loom of darkness overhead. In panic I reared up on my elbow and found that I was sleeping beside my brother under the wagon, and that a night wind was breathing across me through the spokes of the wheel. It came from unimaginably far places, across a vast emptiness, below millions of polished stars. And yet its touch was soft, intimate, and reassuring, and my panic went away at once. That wind knew me. I knew it. Every once in a while, sixty-six years after that baptism in space and night and silence, wind across grassland can smell like that to me, as secret, perfumed, and soft, and tell me who I am (in Willers, p. 119).

Throughout history, humankind has identified sacred places. Thoreau went off to live deliberately at Walden Pond. For Thoreau, Walden became more than a physical location: "It was a laboratory for observation and experimentation; a library of data about geology, history, flora, and fauna; a source of inspiration and renewal; and a testing ground for the man". According to Orr (1992), Walden is a model of the possible unity between personhood, pedagogy, and place" (p. 126). Relationship with nature requires a sensitivity developed through intimate experience with place, not one based on a utilitarian outlook, but one built through a tender understanding and acceptance of the inherent value of nature. "The more we know a specific place intimately - know its moods, seasons, changes, aspects, native creatures - the more we know our ecological selves" (Devall, 1988, p. 47). If we lose our relationship with nature, we also lose our relationship to self, and humankind. "To live in harmony with nature, with the world, naturally brings about a different world" (Krishnamurti, 1991, p. 43).

Unfortunately, we are a deplaced people, our understanding of the reciprocity between nature and self is lost. Technology has removed us from relationship with the land and with one another. We are ever in conflict; within ourselves, with one another, and with the Earth. It would seem that if we are to save the Earth we must first re-establish our relationship with it.

Influence Of A Positive Environmental Role Model

"When we arrive, cockatoos
rise from the forest
in a squawking cloud".

"My father says there has been a forest here
for over a hundred million years".

On our journeys into nature we are often accompanied by someone of importance. In his book Ecological Literacy: Education and the Transition to a Postmodern World , David Orr (1992) describes "an older teacher or mentor as a role model: a grandfather, a neighbor, an older brother, a parent, or teacher" (p. 88). This significant person is someone with whom we can share our experience and quite often someone who takes on the role of teacher. In my own wilderness experiences I have often wondered which of us was student, and which the teacher. Rachel Carlson wrote, "If a child is to keep alive his inborn sense of wonder . . . he needs the companionship of at least one adult who can share it, rediscovering with him the joy, excitement and mystery of the world we live in" (Carlson, in Van Matre and Weiler, 1983, p. 34).

Within the classroom setting teachers take on the role of significant adult. Hungerford and Volk (1990) and Keen (1991) noted the importance of teachers who acted as sensitive, positive role models for their students.

Adolescents And Their Quest For Self

In the painful blur of adolescence, children often lose their acquaintance with nature. Spretnak (1986) spoke of the passage to adulthood.

> Coming of age in the modern era marks a passage into emptiness. At puberty we put aside the ways of childhood, not only the toys and stuffed animals, but also our secret and magical sense of the world, our special relationship with the family pet, with the big tree in the backyard, with the old delivery man, and with our favorite grandparents (p. 15).

She reflected on a monoculture shaped by mass media, viewing adolescence as a time when we are either attracted to the diversions of the adult world or disillusioned by the emptiness of modern society.

In a technological age in which most life experiences are second-hand it should come as no surprise that media, specifically television influences the environmental attitudes and behaviors of adolescents (Iozzi, 1989b). A study done by Alaimo and Doran (1980) and reported by Iozzi (1989b), indicated that most junior and senior high school students obtain environmental information from television. Iozzi recognized that learning could be improved through the stimulation of more senses. As a result, he recommended the use of computers, televisions, video tapes, audio tapes, and periodicals to stimulate the development of positive environmental attitudes within the classroom. Hungerford and Volk (1990) argued that media have been ineffective in changing learner behaviors because they have tended to focus strictly at the awareness level and fail to reach a large audience. They suggest that most success stories are issue specific and therefore, offer little possibility to generalize knowledge and skills to other issues. They do concede, however, that environmental behavior could be changed through the use of media if they were focused at ownership (their words, not mine) and empowerment levels. Media has been remarkably successful influencing consumer behaviors, is it not possible they could be equally as successful influencing environmental advocacy, after all, media only mediate what they are paid to accomplish?

Adolescence is a time for examining and re-examining values and beliefs, for challenging and developing attitudes and opinions, and exploring the world around us. A child learns to believe an array of things and to act in accordance with these beliefs. Adolescents, on the other hand continually question and challenge what they previously considered fact in an attempt to make sense of the world.

According to Newhouse (1990) environmental attitudes are often formed and changed as a result of life experiences, for example, the environment in which a person grew up. She believed that attitude significantly influences behavior. Iozzi (1989a) held the opinion that the learning process is effected initially through the affective domain. The affective domain includes emotions and feelings which are based on beliefs and values. These beliefs and values provide the foundation for the development of personal philosophies which become the basis for an individual's overt behavior. Thus, our beliefs and values influence our choices and our actions. Ramsey and Hungerford (1989) define a belief as "an idea which a person holds to be true. The idea may or may not be true, but the person believes it is" (pp. 29-30). Beliefs are tied to values. A value may be defined as the worth or importance assigned to something by an individual or a group. Beliefs are usually associated with the cognitive domain. It is difficult to separate attitudes and beliefs, therefore a balanced approach to environmental education would consider both the affective and the cognitive domains.

Webb and Sherman (1989) define values as beliefs which suggest what is personally or socially desirable. They do not exist in isolation but in comparison to other things. Values guide behavior, they are highly personal and change as we mature (Webb and Sherman, 1989). Normative influences are seen to have powerful affects on behavior. Despite attitudes to the contrary, we often act in accordance with societal norms. Hungerford and Volk (1990) suggested that situational factors "such as economic constraints, social pressures and opportunities to choose different actions" (p. 10) may contribute to attitude-behavior discrepancies. Newhouse (1990) noted that very little research has been conducted regarding how environmental attitudes are formed. This gap in the literature is a serious omission in view of the fact that attitudes have a direct association with behavior.

Experience In The Natural World At An Early Age

> *"My father says there used to be crocodiles here,*
> *and kangaroos that lived in trees.*
> *Maybe there still are".*

In the lives of most people who define themselves as environmentalists, there is experience in the natural world at an early age:

> Leopold came to know birds and wildlife in the marshes and fields around his home in Burlington, Iowa before his teens. David Brower, as a young boy on long walks over the Berkley hills, learned to describe the flora to his nearly blind mother (Orr, 1992, p. 88).

Wallace Stegner (in Willers, 1991) wrote of his early lessons in the wilderness: "I, too, have been one of the lucky ones. I spent my childhood and youth in wild, unsupervised places, and was awed very early, and never recovered" (p. 118).

Children are open to the world around them, filled with interest and curiosity, and unencumbered by excess knowledge and information. In order to gain insight into factors which influence students values it is necessary to establish when (at what age) beliefs and values are formed. Tourney and Tesconi (1977) as cited by Shepard and Speelman (1985-86) suggested "the majority of an individual's basic attitudes, and therefore, behavioral tendencies, are formulated between the ages of seven and twelve" (p. 21). Iozzi (1989a), Shepard and Speelman (1985-86), and Gigliotti (1990) noted that a significant portion of environmental attitudes and values are developed during elementary school. Thus, early experiences in nature may positively affect environmental attitudes and behavior.

Direct Experience With Nature

"I follow a creek into the rain forest.
I pretend it is a hundred million years ago".

"On the bank of the creek, the vines and creepers
try to hold me back.
I push through. Now the forest is easy to walk in".

Much of the work concerned with learning environments suggests that non-traditional learning environments are more effective than traditional ones for imparting concepts and processes related to ecology. Hungerford and Volk (1990), Iozzi (1989a), and Van Matre (1990) identified the importance of immersing the learner in non-formal outdoor settings for extended periods of time. Shepard and Speelman (1985-86) found a correlation between program length and the development of positive attitudes. Also, they found the correlation between an attitude towards a particular behavior and the behavior itself to be relatively strong, especially, where "the attitude has been formed or changed through direct experience with the object of the attitude" (p. 20).

As much as possible we need to get students and teachers out of classrooms and away from buildings. Wilderness experiences educate all facets of an individual; the intellectual, the spiritual, the physical, and the emotional. In nature, we stop worrying about the future and the past and become present in the moment; our entire focus being our immediate experience with nature. There are fewer distractions to elicit our attention and therefore, a connectedness through experience. Each moment spent in nature's classroom provides children with the opportunity to develop a connection with the natural world.

Keen (1991) was of the belief that learning is heightened through familiarity and "that direct experience of the subject matter aids the learner in the development of a more thorough comprehension" (p. 31). Learning based on direct experience promotes generalization of experience enhancing the transfer of concepts from one learning situation to another. Keown (1991) emphasized the importance of first-hand experiences in natural settings:

> We must do more than learn about the land and its systems, as important as that dimension is. We must experience the land - see it, hear it, feel it. Then our values, in combination with our knowledge, will help us be intelligent, caring stewards of the Earth (p. 11).

He elaborated on the inherent value of learning experiences in the natural environment:

> There is no classroom equivalent to walking a mud-bar in a river to observe a heron's track or discovering plant or animal traces in rock that was a mud-bar millions of years ago. There is no classroom equivalent to observing a river - clean, clear, and healthy as it enters a city - and later to find it green and oxygen deficient with the community of pollution organisms as it leaves the city (p. 30).

In an article entitled "The Gift of Wilderness", Wallace Stegner (in Willers, 1991) wrote:

> I have a teenaged granddaughter who recently returned from a month's Outward Bound exposure to something like wilderness in Death Valley, including three days alone, with water but no food, up on a slope in the Panamints. It is a not-unheard-of kind of initiation - Christ underwent it; Indian youths on the verge of manhood traditionally went off alone to receive their visions and acquire their adult names. I don't know if my granddaughter had any visions or heard the owl cry her name. I do know she cried some; and I know also that before it was over it was the greatest experience of her young life. She may have greater ones later on, but she will never quite get over this one (p. 117).

Finlayson (1995) also commented on experiences in the natural world. "Some of my best memories are the times I took my two boys fishing, especially when they were young and wide-eyed enough to be unscarred yet by the modern world" (p. F5). Together they fished the lakes and rivers of British Columbia and Alberta or caught frogs among the weeds on the shore when the fishing was slow. "During their teens fishing and the outdoors gave way to hormones and, horrors, girls. Today they tell me they remember those childhood fishing days as strongly as I do . . . they want to get back into it as a lifetime experience . . . the family fishing experience is coming full circle" (Finlayson, 1995, p. F5).

Experiential Learning

"I sit very still.
. . . and watch.
. . . and listen".

Wilson (1985) explored the development of student empowerment through experiential education. She noted that the inclusion of real or significant learning experiences, individual choice, and power within the learning experience positively affected the overt behavior of students. Wilson believed that more opportunities for student empowerment were created when the teacher gave up control of the learning experience and became a co-learner.

Outdoor educators have appreciated the significance of learning through direct experience since the beginning. However, according to Knapp (1992), "direct experience is not enough . . . if such experiences are to be meaningful and applied to life situations, teachers must help students learn from carefully planned and guided reflection sessions" (pp. 2-3).

Within experiential education there is great potential for empowering the learner. In her work teaching early adolescents skills and attitudes of peacemaking and non-violence, Wilson (1985) used an experience-based approach to teach empowerment skills. Her definition of empowerment, "acting on belief or hope" has two components. First, acting to feel empowered refers to, "knowing it is possible to act", while the second part of the definition suggests that it is our feelings and visions that impel us to act (p. 216).

In order to act, a person must have the desire to act. One's desire to act appears to be dependant upon one's locus of control. Hines, Hungerford, and Tomera (1987) define locus of control as an individual's perception of his or her ability to bring about change through his or her behavior. Therefore, those who are environmentally active, are those who believe that their actions can make a difference. Those with an internal locus of control believe that their actions actually precipitate change and experience success or some form of positive reinforcement for their action. Hines et al. "found that individuals with an internal locus of control were more likely to report having participated in environmentally responsible behavior than were individuals with a more external locus of control" (p. 5).

Research indicates that an internal locus of control probably cannot be developed within the classroom, however, it can be improved through instruction and practice in citizen action skills. Moreover, "an improved locus of control may well result when students have had an opportunity to apply these skills successfully in the community (Hungerford & Volk, 1990, pp. 12-13).

> Parents and teachers may also be highly influential in promoting an internal locus of control by giving children say in matters that will affect them and by encouraging them to make their own decisions and to critically evaluate the opinions of others (Newhouse, 1990, p. 27).

Wilson (1985) considered realness of experience, individual choice, and sharing power in the learning experience to be vital factors in the development of an internal locus of control. Locus of control is inextricably linked to an individual's self-esteem. This can be a disadvantage for adolescents who are continually battling to develop a positive self-image.

Influence Of Environmental Knowledge

"I wonder how long it takes the trees
to grow to the top of the forest!

I find an ancient tree.
It is hollow.
Perhaps aboriginal forest children
played here, too.

I climb inside the tree.
It's dark,
but the twisted roots make windows.
This is a good place to hide".

Traditionally, it has been viewed that an increase in environmental knowledge will result in a corresponding increase in environmentally positive behavior. According to Iozzi (1989a) this is simply not the case. Motivation and values play an extremely important role in the decision-making process. One has only to consider the modern scientific worldview (one of mastery over nature), to realize that scientific objectivity in the form of environmental knowledge in its attempt to improve nature by artificial means is hurtling us headlong into irrecoverable destruction.

According to Iozzi, "knowledge, feelings, and emotions are, in reality, inseparable" (1989a). Therefore, knowledge alone cannot be depended upon to change environmental attitudes and behavior. In fact, as some students increase their knowledge about the environment their attitudes actually become more pessimistic. New concepts are integrated into existing value systems, thereby strengthening their negative environmental attitudes. Responsible action or lack of action, therefore, rests in part, with our values and attitudes about the environment. In the words of David Orr (1992), "even a thorough knowledge of the facts of life and the threats to it will not save us in the absence of the feelings of kinship with life" (p. 87). According to Dewey (1933), "intellectual force does not exist apart from the attitudes, feelings, or emotions that make us open-minded rather than close-minded, responsible rather than irresponsible" (pp. 28-33).

Environmental educators do agree on what knowledge is important. Students need to develop an understanding of basic ecological concepts (the Earth's cycles and systems), they need knowledge of environmental problems and issues, they need to understand how they as individuals impact on the Earth, and lastly, they need knowledge of, and perceived skill in using environmental action strategies.

Feelings Of Responsibility For The Environment

> *"It is time to find my father.*
> *I think I hear the sea.*
> *I walk towards the sound.*
>
> *My father has made a fire*
> *and is cooking the fish he caught.*
>
> *I like fish cooked this way.*
> *But then I feel sad*
> *because the day has gone so quickly.*
> *My father says we'll come here again someday.*
> *But will the forest still be here when we come back?"*
>
> *. . . the story ends.*

In his article "An Iroquois Perspective", Oren Lyons wrote, "You have a mandate, you have the responsibility. Take care of your people - not yourselves, your people" (Lyons, in Willers, 1991, p. 205). Along similar lines, David Orr (1992) speaks of accepting responsibility not for managing the planet, but for managing ourselves. "The problem is not the planet. We are the problem", Orr reflects (p.162).

Unfortunately, existing literature pertaining to environmental responsibility is mostly positivist in nature. Quantitative studies carried out by Hines et al. (1987) suggested that feelings of responsibility or obligation were positively correlated with positive environmental behavior. Individuals who held some personal responsibility towards the environment were more likely to participate in positive environmental behavior than individuals who had no such emotions. As well, individuals who expressed an intention to act in some way related to the environment were more likely to report engaging in environmental behaviors than individuals who expressed no such intentions.

Integrative Synthesis Of Literature Review

Factors influencing the formation and change of environmental attitudes and behaviors are often personal and situational. In addition, the ability to act in a positive environmental regard usually requires the possession of adequate self-esteem. Though there is no common path to environmental activism, there are some common elements which influence individual attitudes and behavior. First, "there is an experience in the natural world at an early age", and second "there is often an older teacher or mentor as a role model" (Orr, 1992, p. 88). At puberty we put away the things of childhood, including our relationship with the natural world. It becomes apparent, that as educators we must offer adolescents learning opportunities which return them to nature. They need opportunities for direct contact with the Earth and they need learning experiences that challenge and excite them. A review of the literature suggests there is a need for qualitative research which examines the interrelationships among the factors affecting environmental attitudes and behaviors and also explores how personal commitment to environmental action can be encouraged within environmental education programs.

Newhouse (1990) noted that "the most powerful experiences in our lives are not those designed to 'educate' us but rather life experiences" (p. 31). Thus, we must bridge the school experience with the everyday lives of our students.

CHAPTER III:
METHODOLOGY AND METHOD

Rationale

To best answer my research question I required a methodology that was flexible. Generalizability was not necessary as I was more interested in acquiring knowledge based on the uniqueness of human experience. I needed a methodology able to provide significantly more than a list of factors contributing to attitudinal and behavioral change. My purpose was to derive meaning from the perceptions, understandings, and interpretations which guide individual actions. This endeavor seemed beyond quantification. Human science or qualitative research provided such a medium for the collection and analysis of data. Human science allows the researcher "to discuss in detail the various social contours and processes human beings use to create and maintain their social realities" (Berg, 1989, p. 6). As such, it provided me with the opportunity to share the insights and understandings participants used in creating meaning within their daily lives. Qualitative research offered a more thoughtful understanding of the child-pedagogic relationship, as well as the opportunity to rely on a more introspective stance (Berg, 1989). Most importantly, it provided me with the opportunity of exploring issues as they arose, and the flexibility to change direction when necessary.

Validity

In positivist research validity refers to whether the instrument of measurement actually measures a given hypothesis. In qualitative research, validity is concerned with gathering evidence to check the researcher's perceptions. As such, the notion of validity is study specific. "Human science strives for precision and exactness by aiming for interpretive descriptions that exact fullness and completeness of detail, and that explore to a degree of perfection the fundamental nature of the notion being addressed in the text" (Van Manen, 1990, p. 17). For this reason, the researcher must remember that lived life is always more complex than any explication of meaning can reveal, and final or full description unattainable (Van Manen, 1990).

Validity in qualitative research can be addressed through a variety of methods. Participant validation requires that throughout the data collection and analysis process the researcher regularly check the accuracy of interpretations drawn with the study participants. A second method requires the triangulation of research techniques. This can imply data triangulation, wherein a researcher combines several methods of data collection and the triangulation of theoretical perspectives and/or analysis techniques. Triangulation increases the depth of understanding an investigation can yield (Berg, 1989). Third, bracketing or suspending researcher bias with respect to the research question. It is necessary for the researcher to point out what they hold to be true about the phenomenon under investigation. Lastly, the presentation of convincing arguments which preserve the native meaning in the data will provide a means of verification.

Reliability

Reliability in empirical research refers to the consistency of the measuring device over time. The qualitative researcher becomes the research instrument, exchanging the positivist preoccupation with reliability over time for indepth understanding and contextual meaning. It becomes necessary for the researcher to rid him/herself of presuppositions (those expectations of what s/he might see) in an attempt to accurately present what is given in experience.

Generalizability

Generalizability in the quantitative sense is not possible in human science research. Qualitative research is empathetically generalizable; "findings are valid to the extent that they resonate with the experience of others who have experienced the phenomenon in question" (Osborne, in press, p. 12). According to Van Manen (1990), "the tendency to generalize may prevent us from developing understandings that remain focused on the uniqueness of human experience " (p. 22). The subjective nature of this study lends itself to the emergence of common experience which may be represented in the lived experience of other grade eight students participating in similar environmental education programs.

Ethical Considerations

My use of human subjects as participants in this study necessitated the adoption of measures which protected their rights. This was ensured through the use of informed consent forms signed by the participants and their parents or guardians. The informed consent form acknowledged that participation in the study was voluntary, anonymity insured, and withdrawal from the study possible without consequence. No research was conducted prior to receiving informed consent. Please see Appendix 1, Informed Consent Form.

In addition to the informed consent, consent was obtained from the Edmonton Public School Board through the submission of a Co-operative Activity Form which included a brief description of the research project.

Research Participants

After receiving permission to proceed with this study from the Edmonton Public School Board I needed to select appropriate participants. My research would need to take place during the second term of the school year and was not likely to conclude before early June. The time frame required made it impossible to select students in grade nine because of provincial exams. As a result, I decided to approach teachers within the Edmonton Public System who were instructing environmental and outdoor education at the grade eight level, and who were currently using the New Environmental and Outdoor Education Curriculum. I selected research participants from within the New Environmental and Outdoor Education Program because of the program's emphasis on the development of commitment to positive environmental action. I required research participants capable of helping me to better understand the nature of change in environmental attitudes and behavior. Students within the new program could provide such lived experiences.

I spoke with a number of teachers to determine who would best meet the requirements of my study. I not only required an administrator and teacher willing to participate in the study, I also needed a teacher who would feel comfortable with my presence in the classroom for a period of two months. Having found such an individual, I spoke with her at length about the study and asked for her input regarding the selection of student participants. As it turned out, of the 16 students registered in the program, five were selected as participants in this study. It was my feeling that five participants was a manageable number to ensure that quality data was obtained. The integrity of the qualitative paradigm requires indepth understanding in order to derive contextual meaning, as such, it was necessary to limit the number of participants in my study. Optimal variation among participants was obtained through the selection of students representative of different cultural backgrounds, genders, and levels of experience within the environmental and outdoor education program. Participants were required to keep a detailed journal during their two day wilderness camp and be available for several informal interviews and sharing circles throughout the duration of the course.

On the basis of personal interest in participating in this study and competency in communicating their feelings and opinions both orally and in writing (based on recommendations from their teacher), three males and two females were selected. Biographical information is presented in Chapter IV - The Within Analysis.

Procedure

I met with each participant individually at the outset of the study in order to establish rapport and explain the role of the participant. The meetings were of an informal nature. We discussed: their perceptions of the course which began in early February and the research which began in mid-April; why they decided to take the course; and the journalling process.

Formal data collection began with a group sharing circle that was recorded on audio tape, transcribed by myself, and analyzed for themes (see Appendix 3). This was supplemented with participant journals, and informal observations in the form of anecdotal notes, slides, and video recordings. Informal conversations were ongoing and were an opportunity for me to get to know the students on a more personal level as well as to check the accuracy of interpretations drawn thus far.

The use of reflective journals comprised the bulk of my data. Each participant was asked to keep an ongoing journal during their wilderness camp (a two day wilderness camp experience) in which they would answer specific questions and record their thoughts, feelings, and opinions regarding environmental attitudes and behaviors (see Appendix 2 - Sample Journal Questions). Participants were also given cameras with the instruction to take pictures of what environmental education meant to them. The journals were read by me several times before a thematic analysis was carried out.

Summer vacation terminated the study and my access to the participants. I would have liked to verify theme selections drawn from the journals with the participants, however, this was not possible.

Bracketing

. . . personal biases . . .

The problem of qualitative inquiry is not always that we know too little about the phenomenon we wish to investigate, but rather that through our common sense understandings, suppositions, and preconceptions we may know too much, and thus interpret the meaning of the phenomenon before we truly understand the significance of the question (Van Manen, 1990). I have included a statement of my opinions and preconceptions so that the reader may consider my perspective when reading interpretations of the data.

My experience as a junior high school teacher over the last two years has made me aware of the all-encompassing need adolescents have for acceptance both from their peers and the significant adults in their lives. I believe that adolescent behavior although guided by values and beliefs is specific and situational. Adolescents will act in a given situation in accordance with the expectations of those around them. Thus, when surrounded by peers an adolescent will behave according to an ethic of "coolness" valued by the group. In the presence of an adult whom the adolescent perceives as being important s/he will behave in a manner which promotes feelings of acceptance or belonging.

With these preconceptions I began my role as research instrument. I am bound by my own experiences and opinions, and in essence have become an integral part of the study.

Data Analysis

The accepted methods for analyzing qualitative data are varied. What is of importance relative to analyzing qualitative data is that a rigorous interpretation of the participants lived experience be presented. I wanted an approach that would allow the data to speak for itself and phenomenology provided such a framework. The system of hierarchical thematic analysis I used is relatively common in phenomenology and discussed at length in the literature (Barrit, Beekman, Bleeker, and Mulderij, 1984; Van Manen, 1990). Data sources for my study included an audio-taped sharing circle, personal journals, video tape, informal conversation, and anecdotal notes. Throughout the procedure, the processes of data collection and interpretation became inseparable. This is explained in greater detail.

Thematic Analysis

Sharing Circle . . .

The audio tape from the initial sharing circle was transcribed and answers by different participants to the same question placed together. I was interested in preserving the integrity of individual experience so responses were also highlighted individually. The transcripts were then read and re-read in order to grasp underlying thematic meanings in the participants descriptions. Themes arising from the initial analysis provided the basis for journal questions, and also the opportunity for the researcher to validate interpretations with the study participants. (See Appendix 2 for Sharing Circle Transcripts).

Journals . . .

Each journal was read and re-read for familiarity before any analysis was begun. Thematic analysis was then carried out through a detailed or line-by-line approach. The essence of recurring themes emerging from the data were lifted through the selection of appropriate phrases, sentences, or sentence clusters. All sentences containing similar themes were grouped under one all encompassing thematic cluster heading. These are identified as First Order Clusters Of Themes.

In an attempt to reduce the first order clusters further, common themes were collapsed and placed under a more specific thematic cluster heading. These are identified as Second Order Clusters Of Themes. Data from the student journals, and the initial sharing circle provided support and validation for the themes.

Written Synthesis

A written synthesis for each participant was completed using descriptions from their data and organized according to common themes.

Relevant data from informal interviews, anecdotal notes, and video taping was included in the written synthesis which provided further validation.

With the insights of individual participants identified, a perception of how environmental attitudes and behaviors of adolescents are formed and changed began to evolve. Commonalities among the participants, in the form of themes arising from individual experiences, were then presented simultaneously forming the basis for the thesis.

CHAPTER IV

THE WITHIN ANALYSIS: PARTICIPANT CASE STUDIES

Introduction

Chapter IV introduces each research participant and presents the data analyzed according to the method described in Chapter III. Short pseudonymous biographical descriptions containing dialogic anecdotes are included to assist the reader in entering the life world of the participants. Tables illustrating first order clusters of themes follow the biographies. Statements from the original transcripts are recorded in the right hand column and labelled according to source (journal or sharing circle transcripts). Thematic cluster headings on the left hand side represent statements of common themes drawn out of the transcripts. I was able to identify nine common themes in the descriptions of the participants, however, this is not to say that all informants gave evidence of every theme in their description. Thematic cluster headings are not distinguished according to priority.

The second table within the case studies delineates second order clusters of themes. On the left is a more encompassing cluster heading and on the right are the first order themes that fall under the second order heading. Collapsing the thematic statements this way provided me with more insight into variations in individual experiences.

An integrative synthesis of the participants' experience completes the within person analysis. Although I have attempted to be true to the phenomenon studied - change in environmental attitudes and behavior of adolescents - decisions about the meaning of experience do reflect the researcher's reading of the data.

Introducing Joshua . . .

Joshua is a quiet, slightly withdrawn young man from a middle class Edmonton home. He was the first student to demonstrate interest in this study and met with me over brown bag lunches the second day of my research. Joshua was concerned about the state of the environment, however, he explained that he felt rather powerless to make any significant contributions to the betterment of it. His feeling was that "one person can't make that much of a difference".

Joshua spoke of environmental problems/issues he was concerned about: "The major environmental problems facing society today are the ozone layer (if it's gone then we'll all burn) and the destruction of the tropical rain forests . . . my concerns about the rain forests are the loss of plant and animal species and oxygen depletion". Though he was able to identify environmental problems, Joshua was not sure he, as an individual, could do anything to help. In Joshua's voice I heard uncertainty, not pessimism. He was well aware of the consequences of continued environmental destruction and degradation, but understood that it would require more than the efforts of one person to fix.

Perhaps more confident in his academic abilities than his social skills, Joshua appeared to be less influenced by his peers than the other participants. He enjoyed camping and the opportunity of getting away from civilization.

TABLE 1 - JOSHUA'S FIRST ORDER CLUSTERS OF THEMES

THEMATIC CLUSTER HEADING	THEME STATEMENTS
1. Family Influence.	Journal - I had Cheerios, milk, and ice tea . . . the Cheerios we buy in these big twin packs . . . I think the Cheerios company should get rid of the box and we should buy 4 litre containers. - we went camping to Kananaskis once, but my mother didn't like it. - recycling was no ones idea they just came around and gave us a Blue Box.
2. Feeling of Control.	Journal - My relationship to the earth is kind of vacant. - I don't think of the earth that much. - I don't feel I have the power to change anything because I don't think one person can make that much of a difference. - I haven't really taken any environmental action. - I don't feel that just one person can do anything. - I rode my bike to school. - I recycle and try not to buy over packaged stuff.
3. Peer influence.	Journal - My friends sometimes influence me from taking positive environmental action.

TABLE 1 - JOSHUA'S FIRST ORDER CLUSTERS OF THEMES (CONTINUED)

4. Direct Experience With Nature.	Journal - This photograph shows that we actually learn stuff while we're having fun . . . they are learning how to get into a canoe. - The camp was the most meaningful experience in this course. - We got to get away from the city . . . not totally away from civilization, but into the woods to do nature stuff. - My favorite part of the camp was canoeing because it was lots of fun. - My least favorite part of the camp was the food . . . we should have been cooking it over the fire. - I took this picture to show how in Outdoor Ed. we go places like in the woods far out from normal civilization. - This picture shows us taking a break and having lunch,with some wild flowers in the background. - In this one (photograph) I was trying to get the canoeist so you could see that this is something we don't normally do. Sharing Circle - I like riding my bike and going for walks. - I like going to the mountains.
5. Previous Outdoor Experience.	Journal - I once went to Beavers, Cubs, and Scouts. - It did have a little influence on me because of all the camping we did. - It made me think that it is a privilege to go camping.

TABLE 1 - JOSHUA'S FIRST ORDER CLUSTERS OF THEMES (CONTINUED)

6. Influence of Media.	Journal - I learned about the ecosystem . . . what it is . . . how delicate it can be. - The Green Peace video was meaningful because we saw what people were doing to the environment. - I once in a while watch news stuff . . . they'll have a "Green Minute" or something like that. - I watch it to gawk at what kind of garbage people have produced. - I'll browse through those "50 Things You Can Do To Save The Environment" books if I'm in a bookstore.
7. Influence of Teachers.	Journal - Teachers influence me the most because they show you all those videos . . . that's (school) where we learn all our stuff.
8. Activities Perceived As Being Fun.	Journal - I took this course because it was fun. - My favorite part of camp was canoeing because it was lots of fun.
9. Environmental Knowledge.	Journal - I learned things such as where our garbage goes, how to climb, cross-country skiing, first aid (bandaging), about groups like Green Peace. - I also learned about the ecosystem, what it is and how delicate it can be. - Although I buy a lot of them I think that CD's may be a big waste problem in the future . . .they should get rid of the outer plastic wrap and make the box out of tough cardboard.

TABLE 1 - JOSHUA'S FIRST ORDER CLUSTERS OF THEMES (CONTINUED)

	- This photograph shows that we actually learn stuff while we're having fun . . . they are learning how to canoe. - The major environmental problems facing society today are the ozone layer (if it's gone then we'll all burn) and the destruction of the tropical rain forests. - My concerns about the rain forests are the loss of plant and animals species and oxygen depletion. - Something very old I saw on our scavenger hunt was the North Saskatchewan River. - An insect ate two small holes in the leaves of an aspen. Sharing Circle - I think that Environmental Education is learning about the environment and the things that are in it. - I imagine garbage goes to a dump somewhere. - Alberta produces oil and maybe lumber as natural resources. - Companies should have to prove that their products are environmentally friendly before they are labelled environmentally friendly.

TABLE - 2 JOSHUA'S SECOND ORDER CLUSTERS OF THEMES

THEMATIC CLUSTER HEADING	THEME STATEMENTS
1. Quest For Personal Identity.	1. Feeling a lack of power to promote change. 2. Relationship to the earth is vacant. 3. Enjoyment of outdoor activities. 4. Involvement in positive environmental behavior.
2. Direct Experience With Nature.	1. Finding meaning in outdoor activities. 2. Learning through the outdoors. 3. Enjoyment of being away from civilization. 4. Enjoying nature. 5. Intellectual growth through exposure with the natural environment.
3. Societal Influence.	1. Reference to family influence. 2. Recognition of peer influence. 3. Attribution of meaning to videos. 4. Observation of learning associated with school. 5. Increased awareness of environmental problems.

Interpretive Synthesis Of Joshua's Environmental & Outdoor Education Experience

Quest For Personal Identity . . .

Like most adolescents Joshua was just beginning to discover who he was in relation to the rest of the world. In his journal, Joshua expressed the feeling that one person doesn't have the power to make much of a difference in this world. He relates a sense of hopelessness, explaining that his relationship with the Earth is kind of vacant. Despite the fact that Joshua admits feelings of powerlessness, he easily sites many personal examples of positive environmental behavior. For example, riding his bike to school instead of taking the bus, recycling, and not buying over packaged items.

Joshua spends time considering the impact of not only his actions, but the consequences of society's actions. "Although I buy a lot of them, I think that CD's may be a big waste problem in the future . . . they should get rid of the outer plastic wrap and make the box out of tough cardboard". In his journal, Joshua makes reference to major environmental problems such as ozone depletion and the destruction of rain forests. What is missing here is an understanding of the interrelationship between the actions of the individual and the resulting impact on the Earth in the form of major environmental problems.

Direct Experience With Nature . . .

For Joshua, the opportunity to leave civilization behind and venture into the wildlands was a positive one. Through personal interaction with nature Joshua experienced what he cited as " . . . the most meaningful experience in this course". It made no difference to him that the camp experience occurred at a residential wilderness centre instead of a pristine wilderness setting, only, that he was away from civilization as he knew it and surrounded by nature. Here, he had the opportunity to learn skills experientially; directly versus indirectly. How you feel when you are learning something is very important, and here learning was fun. All of a sudden, Joshua noticed the wild flowers growing around him and appreciated their inherent beauty. He felt the power of the water against his paddle and learned how to keep his canoe tracking in a straight line kinesthetically.

It has been said that there is no substitute for experience. In today's world, most of life's experiences are second hand, Joshua discovered that this wasn't good enough. He wanted the complete nature experience, not a substitute. "My least favorite part of the camp was the food . . . we should have been cooking it over the fire". Joshua experienced frustration when the opportunity for direct experience was taken from him.

Societal Influences . . .

This theme is characterized by the need for a feeling of social belonging. Societal influences on environmental attitudes and behavior can be witnessed from several external sources: family, peers, media, previous outdoor experience, and teachers.

Although Joshua's family failed to share camping experiences, "We went camping once, but my mother didn't like it", his family nevertheless influenced his environmental behavior. Recycling was practiced at home on a regular basis and consideration given to the purchase of environmentally friendly products.

Arguably, one of the most important relationships we establish in our lives is with our peers. Adolescents have an overwhelming requirement for acceptance and reinforcement from their peer group. Joshua realized that his friends did indeed influence his behavior. "My friends sometimes influence me from taking positive environmental action". When I asked Joshua how they influenced his behavior he said that he often did what his friends did. I believe I understand what he was trying to say. During the wilderness camp the students were given two hours of free time. I was surprised to find Joshua in the cookhouse along with several others slumped on couches watching a video of "Crocodile Dundee". It was raining, and Joshua's friends didn't want to go outside, therefore, in order to enjoy their companionship he also chose to position himself in front of the television The consistency of Joshua's behavior was therefore challenged by the behavior of his peers.

For Joshua, there is a connection between the influences of teachers and that of media. Although attributing learning to school, Joshua suggested that environmental attitudes and behavior are not influenced by teachers directly, but rather through the information they present. "Teachers influence me the most because they show you all those videos". Therefore, the video, not the teacher creates the impact.

Introducing B.J. . . .

B.J. is the sort of person who is good at everything he does. Strong in both academic and physical skills, he demonstrated a great zest for life. Although outwardly confident, I occasionally glimpsed a side of him that was a little hesitant to grow up. B.J. had many opinions to share and often took on a dominant role in our sharing circles. Early on, he expressed the opinion that he was totally in control of his life and his actions. In his own words he spoke of a positive relationship with the Earth, " . . . my personal relationship with the earth is pretty good . . . some of the things I do are environmentally active". When I asked him what environmentally friendly activities were a part of his life he replied, " . . . some things I did today that are good for the earth are . . . I rode my bike to school, I took a shower . . . I ate eggs, and they are packaged very well". He continued, "I inform others how they could do better at environmental things". B.J. had a strong recognition of his personal responsibility in helping to solve our current environmental dilemma and emphasized the importance of learning how to take care of the Earth.

This was his second year in Environmental and Outdoor Education and he often spoke of his enjoyment of outdoor activities such as fishing, and exploring in the river valley. Like most of us, B.J. was fascinated by animals.

TABLE 3 - B.J.'S FIRST ORDER CLUSTERS OF THEMES

THEMATIC CLUSTER HEADING	THEME STATEMENTS
1. Family Influence	Sharing Circle - I like going to Vancouver because I like the ocean and I like the scenery . . . I go with family. - Depends on what kind of garbage you're talking about . . . if it's compost and grass clippings it goes into the ravine. - We're making this big hill in the backyard. - We recycle and put our recycling in the recycle box. - Other garbage goes to Cloverdale Landfill Site or whatever it's called. - We've seen a fox in our backyard . . . porcupines and squirrels.
2. Feeling of control.	Journal - I feel I have the power to make changes in my life. - I have developed good habits and I have complete control over my actions. - My personal relationship with the earth is pretty good. - Some examples of things I did today that are good for the earth are . . . I rode my bike to school . . . I took a shower . . . I ate eggs and they are packaged very good. - I am influenced by myself and the way I feel responsible for the environment. - Some of the things I do are environmentally active. - I observe the things that happen around me. - I inform others how they could do better at environmental things.

TABLE 3 - B.J.'S FIRST ORDER CLUSTERS OF THEMES (CONTINUED)

	- I pick up litter. - Something golden in the environment is the hair on my head. Sharing Circle - I think our problem is mainly how society lives . . . they are just careless and they're not doing what they are supposed to be doing . . . if we don't clean up our attitudes soon we will become extinct. - I tell all my friends to clean up their garbage, but they never do, so I pick it up myself.
3. Peer Pressure.	Journal - Friends sometimes influence my behavior . . . like littering . . . wrecking plants . . . breaking trees. - I tell all my friends to clean up their garbage, but they never do, so I pick it up.
4. Direct Experience With Nature.	Journal - The most meaningful activity for me was going down to the ravine because there are lots of trails to explore and things to watch. - It was fun to experience sleeping in a teepee. - The most meaningful experience in the whole course was going to camp and staying in the teepee. - I liked it (the teepee) because of the feeling of being in the wild with the bears. - My favorite part of the camp was staying in the teepee because we had a fire in the middle. - I took this course because I don't like staying inside the school in school time.

TABLE - 3 B.J.'S FIRST ORDER CLUSTERS OF THEMES (CONTINUED)

	- I like doing sports that have to do with the outdoors.
5. Previous Outdoor Experience.	Sharing Circle - I took this course last year.
6. Media Influence.	Journal - This is a symbol of tearing down the Rain forest (photograph of B.J. with a toy bulldozer). - I watch environmental programs on Access Network. - I don't know of any specific shows. - I remember one on the Greenhouse Effect. - These (t.v. shows) affect my attitude on the environment.
7. Activities Perceived As Being Fun.	Sharing Circle - I took this course because I liked it last year. Journal - It was a very fun experience sleeping in a teepee. - My least favorite part of the camp was hiking . . . it was the least fun.
8. Environmental Knowledge	Journal - I've learned that the earth is being destroyed through pollution from cars and chopping down trees.

TABLE - 3 B.J.'S FIRST ORDER CLUSTERS OF THEMES (CONTINUED)

	Sharing Circle - Environmental Education is learning about the place I live and learning how to take care of it. -I think our problem is mainly how society lives . . . they are just careless and they're not doing what they are supposed to be doing . . . if we don't clean up our attitudes soon we will become extinct. - Other garbage goes to Cloverdale Landfill Site. - Some of our garbage is probably dumped into the ocean . . . some of it that we put in the landfill seeps through the bottom of the landfill site and goes into the little streams that are going underneath it and eventually it ends up in our lakes and kills our fish. - I don't know much about flowers . . . so I don't know which ones come out first in the spring. - Water is one of Alberta's natural resources. - Some of the rain forest has to be cut down for jobs and for industry . . . otherwise people would be living on the streets and will be dying. - The people (Green Peace) who are trying to stop the people up north from hunting seals . . . well if they don't hunt seals they will lose their jobs and they will have no life whatsoever.

TABLE 4 - B.J.'S SECOND ORDER CLUSTERS OF THEMES

THEMATIC CLUSTER HEADING	THEMATIC STATEMENTS
1. Quest For Personal Identity.	1. Recognition of control over actions. 2. Identification of a good relationship with the earth. 3. Description of environmentally friendly behavior. 4. Personal responsibility for the natural environment. 5. Observation of nature. 6. Enjoyment of outdoor activities. 7. Assessment of personal behavior.
2. Direct Experience With Nature.	1. Enjoyment of being outside. 2. Experiencing self as a part of nature. 3. Attributing meaningful experience to the opportunity of exploring outdoors. 4. Associating outdoor activities with fun.
3. Societal Influence.	1. Reference to influence of family. 2. Recognition of negative peer pressure. 3. Acknowledgement of media influence. 4. Societal responsibility for present state of the environment. 5. Recognition of the need for humans to use natural resources.

Interpretive Synthesis Of B.J.'s Environmental & Outdoor Education Experience

Quest For Personal Identity . . .

B.J. viewed himself as personally responsible for his actions and felt a sense of responsibility towards the Earth. He described his relationship with the environment as good and openly challenged groups such as Green Peace whom he felt had a limited environmental perspective. During our initial sharing circle he expressed concern over the Inuit sealing issue and the destruction of rain forests, suggesting that humans are part of the environment and must be treated accordingly. "Some of the rain forest has to be cut down for jobs", he stated. People in poor countries must be able to feed themselves and aboriginals who live off the land should be allowed to continue living their traditional lifestyles " . . . or they will have no lives whatsoever".

B.J. enjoyed observing nature. When asked to find "something golden" in the environment during a scavenger hunt he identified, "the hair on my head", indicating that he considered himself a part of, and not apart from, the environment; perhaps offering a deeper, more sensitive approach to nature.

In his journal, B.J. makes many references to positive environmental behavior. "Some things I did today that are good for the Earth are . . . I rode my bike to school . . . I took a shower (instead of a bath which uses more water) . . . I inform others how they could do better at environmental things". Rather than attributing his concern for the environment to any outside influence, B.J. accepts responsibility himself saying, "I have developed good habits and I have complete control over my actions". Believing you can make a difference affects whether or not you do make a difference.

> Once people see themselves as unique, as special, or as particularly skilled or able, then they can also see themselves as people who are up to a challenge, people who have the ability to make a difference (Warner, 1992, p. 28).

Like most adolescents B.J. was influenced by activities that he perceived as being fun. He enrolled in this course because he enjoyed it last year and participates in outdoor activities such as fishing, because for him, they are fun. Does this mean that adolescent behavior is motivated by fun?

Direct Experience With Nature . . .

Time spent in the wilderness manifested itself as an adventure for B.J. For him, the opportunity to sleep in a teepee was a significant event. "The most meaningful experience in the whole course was going to camp and staying in the teepee . . . I liked it because of the feeling of being in the wild with the bears". Once again, I am reminded of B.J.'s desire to be a part of nature and the importance of providing children with in-the-environment learning opportunities. The development of physical skills and the extension of personal competencies in the outdoors was very important to B.J. "I like doing sports that have to do with the outdoors", he said. From canoeing and fishing, to mastering the ropes course, B.J. lived for the challenge.

B.J. spent his free time carving a wooden spatula out of an interesting piece of wood that he'd found on the ground. Oblivious to the rain, he sat outside, hood up, carving contentedly. When it was time to leave the camp although he was packed and ready to go, I'm not sure that he was really ready to leave.

Societal Influences . . .

For B.J., environmental experiences are a family affair. They spend time together enjoying nature and share cooperative responsibility dealing with garbage and recycling around the house. When I asked B.J. where their garbage goes he replied, "depends on what kind of garbage you're talking about . . . if it's compost and grass clippings it goes into the ravine . . . we recycle and put our recycling in the recycle box . . . other garbage goes to Cloverdale Landfill Site". B.J. follows the rules established by his parents and in doing so develops positive environmental attitudes and behavior.

In an effort to establish relationships with his peers B.J. is sometimes led astray. Though he is conscious of this negative influence his desire to be accepted is stronger than his commitment to the environment. "Friends sometimes influence my behavior . . . we litter . . . break plants . . . wreck trees". On occasion, B.J. attempts the role of environmental advocate and encourages his friends to pick up after themselves. "I tell all my friends to clean up their garbage, but they never do, so I pick it up myself". Once again, positive environmental behavior is shown to be situational and inconsistent.

B.J. believed that his environmental attitudes and behaviors were affected by the media, specifically television. He enjoyed watching environmental programs on Access Network and gained environmental knowledge through this medium. In one of the photographs B.J. included in his journal he posed behind a toy bulldozer. The caption read, "This is a symbol of tearing down the rain forest". He saw it as an opportunity to present his feelings on the issue and was trying to create a message with impact. For B.J., a picture is worth a thousand words.

In B.J.'s opinion, "Our problem is mainly how society lives . . . they are just careless and they're not doing what they are supposed to be doing . . . if we don't clean up our attitudes soon we will become extinct". I found it interesting that he initially referred to society as "they" not "us", therefore, failing to include himself as part of the problem, however, in the second part of his statement he uses the pronoun "we", thus including himself as a part of the solution.

Introducing Jenni . . .

This was Jenni's first year in Environmental and Outdoor Education and her first year in Edmonton. She had been encouraged to take this course by a previous teacher. Despite recent back surgery Jenni willingly participated in most activities. An extremely visual individual, she appreciated the aesthetic beauty of nature, especially animals. Jenni was new to outdoor activities and camping, but always eager to participate and cooperate with others. I enjoyed spending time with Jenni and found her gentle, considerate nature very refreshing.

When I asked about her personal relationship with the Earth, Jenni replied, "I think I am not very environmentally active right now . . . I think I could do other things to help the earth". She realized her personal impact on the environment and wanted to improve her behavior. "I might cause pollution to the earth . . . I want to start to recycle", she explained. Jenni appreciated the beauty of the natural world and was drawn to the soothing quality of water: "the water is very beautiful . . . if we didn't have lakes or rivers the fish and other animals wouldn't be able to survive". Although she recognized the inherent value of wilderness, she also expressed uncertainty as to her role in its preservation.

TABLE 5 - JENNI'S FIRST ORDER CLUSTER OF THEMES

THEMATIC CLUSTER HEADING	THEME STATEMENTS
1. Feelings of control.	Journal - It is also important to know what the earth means to you and not to other people. - I think I could do other things to help the earth. - I try not to litter, but sometimes I do. - I think I have the power to change my life about the earth, but sometimes I get lazy. - I think I am not very environmentally active right now. - I don't think I am very responsible, but I want to start to recycle. - To take care of the earth we should always watch what we are doing. - When I woke up this morning I opened up the blinds and I did not turn on the light. - I put my garbage in the garbage can. - I might cause pollution to the earth.
3. Peer Pressure.	Journal - Sometimes when I see garbage on the ground I really feel like picking it up, but my friends might say something or they might do something so I don't. - Usually when I am by myself I sometimes pick up garbage, but I usually don't.
4. Direct Experience With Nature.	Journal - Trees are a big part of the environment . . . they are a beautiful part of the environment. - The water is very beautiful.

TABLE - 5 JENNI'S FIRST ORDER CLUSTERS OF THEMES (CONTINUED)

	- If we didn't have lakes or rivers the fish and other animals wouldn't be able to survive. - Squirrels are very important. - The animals love the forest and some even like people. - Some people wouldn't like the outdoors if it weren't for the animals. - Here there is a lot of space that you can share . . . it reminds me of a valley. - Flowers bring out the colour of the outdoors. - The most meaningful experience for me was when we went camping because I learned a lot of different things like canoeing. - My least favorite part of the camp was when we went hiking because I got tired too fast.
5. Influence of adult role. model.	Journal - The person who has influenced me the most is you (Ms. Sherlock). - Doing this for you has taught me a lot of different things . . . you taught me how to paddle a canoe. - If I hadn't done this for you I would probably still litter and not really care about the environment. Sharing Circle - I took this course because where I used to live the teacher that I had said it was going to be fun.

TABLE - 5 JENNI'S FIRST ORDER CLUSTERS OF THEMES (CONTINUED)

6. Activities Perceived As Being Fun.	Sharing Circle - I took this course because where I used to live the teacher that I had said it was going to be fun. - I like going camping and bike riding.
7. Environmental Knowledge	Journal - I learned that the earth is a very important place to take care of. - We should always watch what we are doing. - The leaves on aspen trees are smooth. - Something very old are the trees . . . they have been here for many years. Sharing Circle - Environmental Education is learning about the environment and cooperation. - Some of the major environmental problems today are pollution and not enough people recycle. - Our garbage goes to a landfill.

TABLE 6 - JENNI'S SECOND ORDER CLUSTERS OF THEMES

THEMATIC CLUSTER HEADING	THEME STATEMENTS
1. Quest For Personal Identity.	1. Importance of personal relationship with the earth.
	2. Recognition of a lack of consistency in behavior towards the environment.
	3. Recognition of a personal responsibility to the earth.
	4. Acknowledgement of personal power to control actions.
	5. Involvement in positive environmental behavior.
2. Direct Experience With Nature.	1. Appreciation of beauty in the natural world.
	2. Reference to the interrelationship between animals and their natural environment.
	3. Reflection of the importance of animals to the quality of human life.
	4. Thoughts on sharing nature with others.
	5. Meaning associated with learning outdoor skills.
	6. Enjoyment of outdoor activities.
	7. Learning in the outdoors.
3. Societal Influence.	1. Thoughts on negative peer pressure affecting environmental action.
	2. Attributing positive environmental influence to experience with researcher.
	3. Feeling of social belonging.

Interpretive Synthesis of Jenni's Environmental & Outdoor Education Experience

Quest For Personal Identity . . .

Jenni is from a different ethnic and cultural background than the other participants and although she shares many of their values and beliefs, she holds some unique to her own culture. For her, it is important to develop a personal relationship with the Earth. "It is important to know what the earth means to you and not to other people". Jenni was captivated by animals and the aesthetic beauty of nature. In her journal she made many references to things precious and wild. "Flowers bring out the beauty of the outdoors". The gentle outpouring of Jenni's nature and her sympathy for wild animals reminds me of a passage written by Ralph Aldo Emerson (in Terres, 1991) about beauty, "A beautiful soul dwells always in a beautiful world" (p. 81). In a word, this is Jenni.

Jenni believed that she held the power to make changes in her life, but was realistic in realizing that sometimes her choice was the easy way out. "I think I have the power to change my life about the earth, but sometimes I get lazy". Habits are difficult to form and to break, and once again the issue of consistency in positive environmental action arises. "I try not to litter, but sometimes I do". Jenni knows that responsibility for the Earth lies with us all, however, sometimes she fails to take the actions she knows are right.

The outdoors provides plentiful opportunity for fun and enjoyment. Not surprisingly, Jenni also indicated that she was influenced to participate in activities she deemed fun. "I took this course because . . . it was going to be fun".

Direct Experience With Nature . . .

One of the most delightful experiences in life is the opportunity to share the wonder of a child discovering nature. Jenni's camp experience was such a discovery. She had never been camping before and her experience with nature had been limited to natural areas within urban centres. Almost immediately, Jenni was drawn to the interrelationship between humans and nature. She came across a rather bold squirrel and waited patiently for an opportunity to take its picture. In her journal she wrote, "the animals love the forest and some even love people . . . some people wouldn't like the outdoors if it weren't for the animals". For many of us, animals are the reason for venturing into the wilderness, our experience enriched by the mere glimpse of another of God's creatures. German philosopher, Arthur Schopenhauer (in Terres, 1991) wrote:

> The sight of any free animal going about its business undisturbed, seeking its food, or looking after its young, or mixing in the company of its kind, all the time being exactly what it ought to be and can be, - what a strange pleasure it gives us! . . . The main reason why we take so much pleasure in looking at animals is that we like to see our own nature in such a simplified form. There is only one mendacious being in the world, and that is man. Every other is true and sincere, and makes no attempt to conceal what it is, expressing its feelings just as they are (p. 163).

Jenni filled her journal with photographs of the natural world. She was drawn to the flora as well as the fauna. "Trees are a big part of the environment . . . something very old is the trees . . . they have been here for many years", she reflected.

Direct experience with nature was a significant influence for Jenni. In fact, she cites it as the most meaningful aspect of the entire course. "The most meaningful experience for me was when we went camping because I learned a lot of different things like canoeing".

Societal Influences . . .

Establishing relationships with others and the development of cooperative interaction played a significant role in Jenni's experience. She attributed a great deal of influence to peer pressure. In her journal she wrote, "Sometimes when I see garbage on the ground I really feel like picking it up, but my friends might say something, or they might do something, so I don't".

Jenni made no mention of family influence on her environmental attitudes or behaviors. She wrote nothing of it in her journal, made no reference to it during sharing circles, and expressed no concern over it in conversation. Perhaps, the lack of family influence results from differences occurring within cultural backgrounds of the participants. Camping and outdoor activities would not have been a part of Jenni's traditional culture.

Despite my effort to remain inconspicuously on the fringe, it seems I did have some influence on Jenni's environmental attitudes and behavior. In fact, according to her own words, I influenced her the most. In her journal she wrote, "the person who has influenced me the most is you, Ms. Sherlock . . . doing this for you has taught me a lot of different things . . . you taught me how to paddle a canoe. If I hadn't done this for you I would probably still litter and not really care about the environment". It is my experience that adolescents are often influenced by adults whom they consider significant, perhaps I fulfilled this role for Jenni.

Introducing Robert . . .

In many ways Robert reminds me of my younger brother, Dave, when he was fourteen. For him, quality of life is directly proportional to the number of days spent fly fishing each summer. The best fishing holes are always those inaccessible by road and too far to hike into, so alternative transport is a must. Days are good if you can spend at least part of them outside, and boring should you be stuck indoors. Summers and winters are interchangeable, you just replace fly fishing with ice fishing, and exchange the quad (a four-wheel all terrain vehicle) for a skidoo.

Encouraged by his parents, Robert assumed personal responsibility for the Earth: "I consider myself to be environmentally active because I pick up after other people and I recycle . . . today I picked up some garbage . . . I rode my bike . . . I haven't littered". It is my perception that Robert gained a great deal of knowledge about the environment as a result of direct experience in it. He spends a great deal of time outdoors and is very comfortable in the wilderness. His interest in animals is preceded only by his love for fishing and quadding.

TABLE 7 - ROBERT'S FIRST ORDER CLUSTERS OF THEMES

THEMATIC CLUSTER HEADINGS	THEME STATMENTS
1. Family Influence.	Journal - We went camping on May long weekend and while we were quadding I saw what we were doing to our forests . . . trees were lying dead everywhere, I think we shouldn't be killing so many trees. - While we were fishing the Berland River we watched cardboard boxes and other garbage float by. - We picked up what we could. - My parents influence my environmental attitude and behavior the most because they always take me camping. - They (my parents) tell me what is right and wrong with the environment.
2. Feeling of control.	Journal - Sometimes I'm cruel to the earth because I litter. - Most of the time I put my garbage away. - I feel I have the power to make changes in my life because I'm starting to do it all the time. - Today I picked up some garbage . . . I rode my bike . . . I haven't littered. - I consider myself to be environmentally active because I pick up after people and I recycle.
3. Influence on friends.	Journal - I bug my friends about littering. - I bug them (my friends) about making fires.

TABLE - 7 ROBERT'S FIRST ORDER CLUSTERS OF THEMES (CONTINUED)

4. Direct Experience With Nature.	Journal - While we were quadding I saw what we are doing to our forests . . . trees were lying dead everywhere . . . I think we shouldn't be killing so many trees. - We watched cardboard boxes and other garbage float by . . . we picked up what we could. - I thought this was a good experience (camp) because they taught us lots of things we could do with dead trees. - My favorite part of camp was the game "Star Wars". - My least favorite part of the camp was at Twin Lakes because kids slashed the seats on the bus. - the most meaningful experience for me in the course was survival because I do a lot of camping Sharing Circle - This year I think the course is pretty boring because we never go outside . . . I think we should. - I think environmental education is learning about the environment and spending sometime during class in it.
5. Influence of television.	Journal - Sometimes I watch "National Geographic" specials. - I watch them because I want to know about animals and how they live.
6. Activities Perceived As Being Fun.	Sharing Circle - I took this course because it was fun last year. - I like fishing, camping, and climbing.

TABLE - 7 ROBERT'S FIRST ORDER CLUSTERS OF THEMES (CONTINUED)

7. Environmental Knowledge.	Journal - I learned that you shouldn't be throwing garbage in the bush, the water, or on the road. - The most meaningful activity for me was the animal survival game because it taught me how difficult it is for animals to survive. Sharing Circle - Environmental Education is learning about the environment. - The major environmental problems facing society today are pollution, the deteriorating ozone, and the burning of the rain forest. - I'm not sure where my garbage goes. - The only wild flowers that grow around us are dandelions. - Alberta produces mainly oil (natural resources.

TABLE 8 - ROBERT'S SECOND ORDER CLUSTERS OF THEMES

THEMATIC CLUSTER HEADING	THEME STATEMENTS
1. Quest For Personal Identity.	1. Thoughts and feelings about personal relationship with the earth. 2. Recognition of personal responsibility to the earth. 3. Assessment of personal behavior towards the environment. 4. Feeling of control over actions. 5. Description of outdoor activities as fun. 6. Involvement in positive environmental behavior.
2. Direct Experience With Nature.	1. Observation of environmental destruction. 2. Development of personal opinion regarding environmental damage. 3. Involvement in positive environmental action. 4. Importance of spending time outside. 5. Attachment of meaning to outdoor activities. 6. Learning in the outdoors.
3. Societal Influence.	1. Recognition of parent's influence. 2. Importance of t.v. shows to explore knowledge of animals.

Integrative Synthesis Of Robert's Environmental & Outdoor Education Experience

Quest For Personal Identity . . .

In his journal, Robert described thoughts and feelings about his relationship with the Earth. Though he expressed a feeling of personal control over his actions he also identified inconsistencies in his own behavior. "I feel I have the power to make changes in my life because I'm starting to do it all the time . . . sometimes I'm cruel to the earth because I litter", he explained. In assessing his own behavior Robert is aware of both his positive and negative actions. Robert described himself as being environmentally active, "I consider myself to be environmentally active because I pick up after other people and I recycle". Despite recognizing personal responsibility for the Earth, he did not always choose to act in accordance with it. As with other participants in this study, it appears that environmentally positive behavior is inconsistent and situational.

Direct Experience With Nature . . .

While quadding in a wooded area Robert witnessed a section of the forest that had been clearcut. In his opinion, "I saw what we were doing to our forests...trees were lying dead everywhere . . . I think we shouldn't be killing so many trees". Although Robert was outraged by the clearcut, he failed to understand how his own actions (driving a quad off road) might have been contributing to further environmental damage. In this way, environmental problems remain outside the influence of the individual and become society's problems. Responsibility can then be shifted from "me" to "them", therefore, I am not part of the problem. Does direct experience with significant environmental destruction affect an individual's environmental practices? Perhaps, but only if they understand their personal contribution to the problem.

Robert attributed meaning to outdoor learning experiences. He argued for more time spent in the outdoors, and stressed the importance of learning outdoors. "I think that environmental education is learning about the environment and spending some time during class in it". For him, the most important learning focused around the development of survival skills and learning the ways of animals. "The most meaningful activity for me was the animal survival game because it taught me how difficult it is for animals to survive".

Societal Influences . . .

Robert recognized that his family most affected his environmental attitudes and behavior. "My parents influence my environmental attitudes and behavior the most because they always take me camping . . . they tell me what is right and wrong with the environment". Our parents are our first and most important teachers. They define what is right and wrong, and good and bad, during our most impressionable years. As adolescents we challenge our parent's authority, but we still want their approval.

While on a fishing trip with his parents Robert was given an unforgettable lesson in environmental responsibility. "We were fishing the Berland River . . . we watched cardboard boxes and other garbage float by . . . we picked up what we could". Although it wasn't their garbage, Robert and his family fished it out of the river. His parents acting as positive environmental role models influenced both his attitude and his behavior. Lessons such as this teach us that our responsibility for the Earth doesn't end with our actions . . . it starts there.

In keeping with his interest in animals, Robert wrote that he enjoyed National Geographic specials. Thus, media provided him access to environmental knowledge he considered meaningful. In his words, "I watch National Geographic specials because I want to know about animals and how they live".

Introducing Jane . . .

Jane was absent the day I introduced myself and spoke to the grade eight class about my research, however, upon her return to school she sought me out and expressed an interest in participating in the study. My research had already begun and Jane had missed the first sharing circle. Confident and outgoing she made up for lost time.

At fourteen, Jane is a level-headed young woman with an ecological conscience. In her words, "I try to do what I can . . . the biggest change I've made in my daily life at home and at school is recycling . . . I also try to reuse a lot". She expressed concern for the state of the natural environment: "the major environmental problems facing the world today are landfills, ozone, animals going extinct, and water pollution . . . I am mostly concerned with garbage because our dump is being filled up and they can't find a new one". Despite making positive changes in her lifestyle, Jane did not consider herself to be environmentally active: "I don't really see myself as environmentally active, some people are really active and they make me look like I don't do anything . . . My friend's mom used to go to fur stores and try on furs . . . she would put little pamphlets about animals in the pockets . . . she is very concerned about animal life". I was surprised by this statement, not because of its honesty, but because of its maturity. In Jane's mind, environmental activism went beyond change in personal lifestyle to include involvement in larger environmental problems/issues.

TABLE 9 - JANE'S FIRST ORDER CLUSTERS OF THEMES

THEMATIC CLUSTER HEADINGS	THEME STATEMENTS
1. Family Influence.	Journal - I recycle at home. - My mom tells me to recycle. - For breakfast I had a piece of toast with strawberry jam . . . the bread was in a plastic bag . . . plastic is good it can be recycled . . . so is the jam jar. - My mom buys environmentally friendly products. - My Nana used to work for Environment Canada and she would always give me posters and buttons and stuff. - My family recycles all they can. - We don't have a compost pile. - My mom says if I want a compost I have to take care of it myself. - I think composts stink too much. - I sometimes go camping with my family. - We go to a lake in Saskatchewan every year.
2. Feeling of Control.	Journal - I try to do what I can. - I never litter and I recycle everything I can. - I can't help out a lot, but I can do my own little part. - I think I do all I can to help the earth. - My environmental attitudes and behaviors are influenced mostly by myself. - I feel that I have the power to help. - If everyone does a little it equals out to a lot. - The biggest change I've made in my daily life at home and at school is recycling.

TABLE - 9 JANE'S FIRST ORDER CLUSTERS OF THEMES (CONTINUED)

	- I also try to reuse a lot. - It was my idea to make these changes. - I don't really see myself as environmentally active, some people are really active and they make me look like I don't do anything. - I took a quick shower today not to waste water. - I picked up some garbage from my front lawn. - I put all my garbage in the garbage. - I used a recyclable lunch bag.
3. Peer Influence.	Journal - My friend and I always go down by the river. - My friend's mom used to go to fur stores and try on furs . . . she would put little pamphlets about animals in the pockets . . . she is very concerned about animal life.
4. Direct Experience With Nature.	Journal - The most meaningful experience for me was going to the climbing wall. - I thought the little yellow flower was pretty and the forest was unspoiled. - This lake is unspoiled . . . all lakes should look like this. - This frog is big . . . we took it from its natural environment. - This little minnow we also took out of its natural environment. - The camp was great because I learned a lot about nature. - I liked playing that game at night. - My least favorite part of the camp was when we walked down to the river, the hill was too steep.

TABLE - 9 JANE'S FIRST ORDER CLUSTERS OF THEMES (CONTINUED)

5. Previous Outdoor Experience.	Journal - I was in Brownies, but that was a long time ago and I don't really remember.
6. Media Influence.	Journal - We watched movies that made me feel guilty that I wasn't doing enough . . . they showed people who do so much to help the environment. - Sometimes t.v. commercials influence me. - Sometimes when I'm flipping through channels I stop and watch nature shows. - One show was about the Rain Forest and another was about the Wetlands. - I am mostly concerned with garbage because our dump is being filled up and they can't find a new one. - We watch movies in class that grab my attention so I read labels now.
7. School influence.	Journal - Teachers tell you to write on both sides of the paper. - I recycle at school.
8. Activities Perceived As Being Fun.	Journal - I've never done that before (climbing) . . . it was fun. - I took this class because it looked like fun. - I liked playing that game at night . . .we had fun and it was exciting and a good learning experience.

TABLE - 9 JANE'S FIRST ORDER CLUSTERS OF THEMES (CONTINUED)

9. Environmental Knowledge.	Journal - Environmental Education is learning about the environment. - The major environmental problems facing the world today are landfills, ozone, animals going extinct, and water pollution. - My garbage goes to a landfill. - Alberta produces wheat and gas (natural resources). - I am mostly concerned with garbage because our dump is being filled up and they can't find a new one. - The most meaningful experience for me was the camp because we learned a lot about nature.

TABLE 10 - JANE'S SECOND ORDER CLUSTERS OF THEMES

THEMATIC CLUSTER HEADING	THEME STATEMENTS
1. Quest For Personal Identity.	1. Personal responsibility for the earth. 2. Feeling of control over actions. 3. Importance of own actions in the "Big Picture". 4. Involvement in positive environmental behavior. 5. Identifies outdoor activities as fun.
2. Direct Experience With Nature.	1. Appreciation of unspoiled nature. 2. Finding meaning in outdoor activities. 3. Associates being outdoors with fun. 4. Learning in the natural environment. 5. Recognizes personal impact on the environment.
3. Societal Influences.	1. Recognition of influence from mother and grandmother. 2. Enjoyment of nature with friends. 3. Stimulation of emotion through viewing videos. 4. Attributes positive environmental action to media influence.

Interpretive Synthesis of Jane's Environmental & Outdoor Education Experience

Quest For Personal Identity . . .

In our vain attempts to make a difference in this world we often forget that progress happens one step at a time and change occurs slowly, one person at a time. In her journal, Jane reminded me of the importance of individual actions: "If everyone does a little it equals out to a lot . . . I can do my own little part", Jane wrote. She explained that her environmental attitudes and behaviors were influenced internally. "I feel I have the power to help . . .I think I do all I can to help the earth". In accepting personal responsibility for the Earth, Jane took ownership of her actions.

Direct Experience With Nature . . .

At puberty we put away the things of childhood, "the toys and stuffed animals . . . our relationship with the family pet, with the big tree in the backyard . . . with our favorite grandparents, and also with our secret and magical sense of the world" (Spretnak, 1986, p. 15). On our anxious journey to adulthood we lose ourselves in shopping malls, movie theaters, sports events, fast cars, and the opposite sex. Can we still find meaning in our relationship with the Earth?

Jane found meaning in the opportunity for direct experience. In fact, she stated, "the most meaningful experience for me was going to the climbing wall . . . I've never done that before . . . it was fun". Although the climbing wall mentioned was not situated outdoors (it is located at the

University of Alberta), it simulated an outdoor environment, a rock face. As such, it provided an experiential learning opportunity. Feedback was immediate, the learning was challenging and fun, and it required the use of at least three of our five senses (sight, sound, and touch). It has been my experience that those who enjoy adventure pursuits initially in simulated environments often choose to pursue the activity out in the real world.

In the words of Hazel Henderson (in Knapp, 1992), "Schooling is much like learning to ride a bicycle by reading about it, diagramming it on the blackboard, dissecting the bicycle - but never actually riding it" (p. 2). There can be no substitute for firsthand experience.

In her journal Jane wrote, "the camp was great because I learned a lot about nature". Although we as adults often feel that adolescents are really not from this planet - the magnetism of the wilderness, has a way of breaking through these pubescent barriers. Spending time in nature forces us to slow down, to find simplicity in life - this happens whether we are four, forty, or fourteen. In this stillness we learn.

Jane was drawn to the beauty of the unspoiled world around her. Her journal was filled with photographs of wild flowers, trees, water, friends, and a particularly large frog. When we attribute meaning to something, we attach emotion to it. True relationship is brought about by knowing how our inner world of thoughts and emotions is inextricably linked to the outer world of humanity and the environment (Krishnamurti, 1991).

Societal Influences . . .

Jane recognized the influences of her mother and grandmother as significant. Recycling and purchasing environmentally friendly products was modelled by her mother and practiced by the entire family. Concerned over their lack of a compost pile, Jane asked her mother if the family could start one. Her mother agreed, but added the stipulation that Jane would have to look after it herself. Disgusted by the smell a compost can generate, Jane discarded the idea.

In Jane's words her grandmother also influenced her environmental attitudes and behavior. "My Nana used to work for Environment Canada and she would always give me posters, and buttons, and stuff". Her grandmother's influence though a personal one, is linked with the influence of media.

When I asked Jane what environmental problems/issues she was personally concerned about she replied, "I am mostly concerned with garbage because our dump is being filled up and they can't find a new one". She'd heard a discussion of this problem on the radio and found it particularly interesting because it might impact her personally.

In her journal Jane made several references to the influence of television and videos. At school they watched videos that made her feel guilty for not doing enough to help the Earth. According to Jane, the videos caught her attention and directly influenced her behavior. "We watch movies in class that grab my attention, I read labels now", she stated. Jane attributed positive environmental action to the influence of media. When her emotions were stimulated her behavior was affected.

At home, Jane tuned into nature programs although not on a regular basis. If something interesting caught her eye as she was flipping through channels with the remote, she would watch it. Not surprisingly, Jane admitted that commercials influenced her.

Summary

In this chapter the essence of change in adolescent environmental attitudes and behavior was explored. Although each one presented a unique experience the interrelationship among themes and experience is woven into the larger web of human experience. Chapter V explores these common aspects .

CHAPTER V
THE COMMON EXPERIENCE

As I look over the participant's journals I am reminded that this experience of self-discovery was unique for each child. Jenni took pictures of flowers, Jane found a frog, B.J. reminisced of a night spent in a teepee, Robert spoke of fishing, and Joshua remembered canoeing. Despite the fact that they all reflected on change in environmental attitudes and behaviors differently, commonalities, in the form of influences, ran through their experience. Table 11 illustrates the various common themes identified by the participants throughout their experience. These have been indicated in the table with an asterisk (*). This list is based on themes drawn from the initial sharing circle and the participant's personal journals. As such, it has provided the basis for discussions throughout this chapter. I have integrated the themes according to thematic cluster headings identified in Chapter IV because of the interrelatedness of their nature, and made reference to common experience found within the literature.

TABLE 11 - Summary of the Participants' Influences

Quest For Personal Identity	**Joshua**	**B.J.**	**Jenni**	**Robert**	**Jane**
- Personal responsibility for the Earth		*		*	*
- Feeling of control over actions		*	*	*	*
- Previous involvement in positive environmental behavior	*	*	*	*	*
- Assessment of environmental behavior			*	*	*
Direct Experience With Nature					
- Appreciation of nature			*		*
- Meaning in outdoor activities	*	*	*	*	*
- Experiential learning opportunities	*		*	*	*
- Identification of outdoor activities as fun	*	*	*	*	*
Societal Influences					
- Family influence	*	*		*	*
- Peer pressure	*	*	*		
- Influence of media	*	*		*	*
- Influence of a positive role model	*	*	*	*	*

Personal Responsibility For the Earth . . .

If we do not accept personal responsibility for the Earth, we undoubtedly rely on others to act on our behalf. In accepting personal responsibility we become morally accountable for our actions. According to Jane, ". . . if everyone does a little, it equals out to a lot". Other participants in the study also touched on this subject, though not as directly as Jane. B.J. for example, stated, "I am influenced by myself and the way I feel responsible for the environment". According to Wendell Berry (in Orr, 1992), ". . . we are not smart enough or conscious enough or alert enough to work responsibly on a gigantic scale" (p. 159). In his words, we must opt for a simpler lifestyle, we must waste less, and we must do for ourselves. Although there are many environmental problems which can only be solved at the global level, these changes ultimately rely on " . . . an ecologically literate public willing to support them" (Orr, 1992, p. 161).

Consistency is an integral part of responsibility. Unfortunately, people's responsibility relies on their ability to interpret the consequences of their actions - this is difficult for adolescents who are just being to make sense of the world and may not appreciate how things are interrelated.

Whether or not we choose to accept responsibility for the Earth and act accordingly is a personal decision, however, one thing is clear "nothing will change the effect on the collective, outer landscape until we first change the cause in our individual, inner landscapes" (Maser, in Willers, 1991, p. 56).

Feeling of Control Over Actions . . .

In order to act in a positive environmental regard we must recognize an element of control over our actions and we must believe that our actions can make a difference. Feelings of control are inextricably rooted in self-esteem. The development of self-esteem is an ongoing, and often uphill battle for adolescents. Three of the five study participants felt they had control over their actions and the power to make changes in their lives. Jenni was a little hesitant to accept control saying, "I think I have the power to change my life about the earth", while Joshua wrote, "I don't feel I have the power to change anything because I don't think that one person can make that much of a difference".

Krishnamurti (1991) believed "we need tremendous energy to bring about a psychological change in ourselves as human beings because we have lived far too long in a world of make-believe, in a world of brutality, violence, despair, anxiety . . . the individual is not different from society . . . the society is the individual and the individual is society" (p. 51). Thus, change must begin with individual attitudes and actions. B.J. was conscious of the significance of individual actions in promoting environmental change. He commented on the importance of developing good environmental habits as a basis for action, " . . . I have developed good habits and I have complete control over my actions", he stated. By accepting responsibility for his behavior, B.J. assumed a feeling of control over it.

Previous Involvement in Positive Environmental Behavior . . .

Previous involvement in positive environmental action may affect future involvement in positive environmental action. When I asked the study participants if they participated in any positive environmental activity they were all able to give several examples. Most were involved with recycling both at home and school, preference was expressed for purchasing items with minimal packaging, some were concerned about limiting personal water consumption, others selected mediums of transport not dependant on the burning of fossil fuels, etc. Successful experience with, or knowledge of, environmental problems/issues and the knowledge of skills and/or strategies for solving these problems seems to contribute to positive environmental action.

Assessment of Personal Environmental Behavior . . .

Assessing one's behavior may be an integral part of changing it. Jenni recognized an inconsistency between her desired behavior and her actual behavior. "I think I have the power to change my life about the earth, but sometimes I get lazy". Robert pointed out, "sometimes I'm cruel to the earth because I litter". Jane wanted to have a compost, however, she didn't want to deal with the smell it might produce. "We don't have a compost pile . . . my mom says if I want a compost I have to take care of it myself . . . I think a compost stinks too much".

Assessing our behavior allows us to see not only what actions we are or are not taking, it also helps us to identify why we act as we do, and what connections exist between actions and consequences. It helps us sort out our conflicting values so that we might make sense of our relationship to the Earth and to one another. "As human beings, we participate in the creation of the world we live in . . . as conscious, co-creators, we are the moral, ecological guides for the future" (Maser, in Willers, 1991, pp. 55 - 56). Thus, if we are to change our ecological image we must begin by assessing our current behavior.

Appreciation Of Nature . . .

The frog does not drink up
the pond in which he lives.
- Indian Proverb (in Van Matre and Weiler, 1983, p. 67).

"It may be the love of wilderness that finally teaches us civilized responsibility, for wilderness, once our parent and teacher has become our dependent" (Stegner, in Willers, 1991, p. 113). Perhaps it is the sparkle of clear, blue lake water in the sunlight, or the sight of a beaver busily going about his business, maybe it's the eerie cry of the loon in the night. We cannot experience the gifts of wilderness and remain unmoved. Something primal and long forgotten in the human psyche is stirred, and we are not the same again. Each of the participants according to their own experience realized this. Jane was drawn to the water, "this lake is unspoiled . . . all lakes should look like this", she wrote. Joshua and Robert liked trees. "An insect ate two small holes in the leaves of this aspen", Joshua said. B.J. was drawn to the romanticism surrounding large predators (bears), and Jenni expressed joy in the beauty of it all. "The earth is a very important place . . . we should always watch what we are doing", she reflected. In nature, the participants found pleasure and enjoyment.

Meaning, Fun, And Experiential Learning . . .

Because of the existing interrelationships I will discuss meaning associated with outdoor activities, the identification of outdoor activities as fun, and experiential learning opportunities under this section.

The participants in this study all found meaning in direct experience with nature, whether they were canoeing, involved in cooperative games, exploring trails in the river valley, or simply sitting quietly enjoying nature. The aspect of fun is associated with the perception of meaning. Activities deemed meaningful were nearly always identified as being fun. For example, Jane attributed both meaning and fun to participating in the game "Star Wars", "I liked playing that game at night . . . we had fun and it was exciting and a good learning experience". Joshua wrote, "this photograph shows that we actually learn stuff while we're having fun". While B.J. attributed both meaning and fun to the opportunity of sleeping in a teepee.

If values and beliefs provide the foundation for an individual's behavior, then learning experiences students deem meaningful influence their attitudes and behavior. According to Jenni, "the most meaningful experience for me was when we went camping because I learned a lot of different things like canoeing". Has this then improved Jenni's commitment to positive environmental action? Jenni continues, " . . . doing this for you (participating in the study) has taught me a lot of different things . . . you taught me how to canoe . . . if I hadn't done this for you I would probably still litter and not really care about the environment".

Today's students lack opportunities for meaningful experience and the opportunity to reflect on that experience. The attribution of meaning to a learning experience seems a necessary factor in promoting change.

Family Influence . . .

An influence identified by all but one participant was that of the family. This is hardly surprising, since we do much of our most important learning years before we enter the hallowed halls of higher education. Participants made reference to regular household activities such as the three R's (recycling, reducing, and reusing), purchasing environmentally friendly products, and composting. Parents acted as positive environmental role models for their children, thus, empowering them to act in a positive environmental regard. Other families spent their free weekends and/or summer holidays camping, fishing, and otherwise exploring various natural areas, sharing in one another, and the wilderness. B.J. enjoyed trips to the ocean " . . . I like going to Vancouver because I like the ocean and I like the scenery . . . I go with my family", he commented. "My parents influence my environmental attitudes and behavior the most because they always take me camping", Robert stated. When I reflect back on my own childhood, I too experienced the wonder of nature in the company of my family. I remember hiking through the temperate rain forest on Vancouver Island, out to old Mr. Korgie's cabin - twenty-three years later, I can still remember the amazing wild flowers and the monkey tree growing in his backyard. I also remember my father telling us not to pick the flowers so that they would be there for others to enjoy as well.

Influence Of A Positive Environmental Role Model . . .

An invitation to share the natural world with a significant adult is often the awakening our ecological consciousness needs. In Jeannie Baker's children's story, the protagonist's father takes him on a journey through a tropical rain forest in Australia. In my own life, my father opened the door to the natural world. In the Dene community in which I now live, it is the responsibility of an uncle to instruct a young boy in the ways of the wilderness. Laura Ingalls Wilder (in Anderson, 1991) remembered walks to church with her father, and sister Mary, as a young child:

> The little white daisies with their hearts of gold grew thickly along the path where we walked to Sunday school. Father and sister and I used to walk the 2 1/2 miles every Sunday morning. The horses had worked hard all week and must rest this one day, and Mother would rather stay at home with baby brother, so with Father and Sister Mary I walked to the church thru the beauties of the sunny spring Sundays. I have forgotten what I was taught on those days also. I was only a little girl, you know. But I can still plainly see the grass and the trees and the path winding ahead, flecked with sunshine and shadow and the beautiful golden-hearted daisies scattered all along the way (p. 79).

I began my research with the intention of developing a comfortable rapport with the students. I wanted them to trust me, and feel comfortable enough to share their opinions and experiences. In the course of data collection I often participated in their activities. It was on such an occasion during the wilderness camp that I found myself in a canoe with Jenni. She had never canoed before so I gave her some pointers, and we paddled and talked away the afternoon. It was some time later, I realized the significance of my actions. In her journal Jenni wrote, " . . . the person who has influenced me the most is you, Ms. Sherlock . . . doing this for you has taught me a lot of different things . . . you taught me how to paddle a canoe . . . if I hadn't done this for you I would probably still litter and not really care about the environment". Robert spoke of family fishing trips and the impact they had on his environmental attitudes and behavior, " . . . while we were fishing the Berland River we watched cardboard boxes and other garbage float by . . . we picked up what we could".

Examples of the influence of positive environmental role models are eloquently described in the literature by David Orr, Rachel Carlson, and Wallace Stegner. This is no small influence, it seems that its effects may last a lifetime.

Peer Pressure . . .

There is not a lot in this world more important to an adolescent than the acceptance by his or her peers. Perhaps the most significant effect of peer pressure is that it compels behavior to be inconsistent and situational. Positive environmental action an individual may take in one instance is omitted in another. "Acting to remain consistent with one's values and attitudes may be an integral part of accepting responsibility" (Cuthbertson, 1993, p. 113). According to B.J., negative peer pressure can actually reinforce environmentally destructive behavior. "Friends sometimes influence my behavior . . . we litter . . . break plants . . . wreck trees". Joshua also spoke of peer pressure, " . . . my friends sometimes influence me from taking positive environmental action", he explained. Peer pressure does not always manifest itself as a negative influence. In her journal Jane wrote, " . . . my friend and I always go down by the river". Thus, Jane's friend provided companionship, someone with whom to share communion in nature. Concern for the environment took Robert a step further. Rather than accept negative peer influence he chose to stand up to his friends: " . . . I bug my friends about littering . . . I bug them about making fires", he stated. Robert's statement reminds me of the significance of positive peer pressure!

Influence Of Media . . .

> The needs of man, if life is to survive, are usually said to be four - air, water, food, and in the severe climates, protection. But it is becoming clear today that the human organism has another absolute necessity . . . This fifth need is the need for novelty - the need, throughout our waking life, for continuous variety in the external stimulation of our eyes, ears, sense organs, and all our nervous network (Platt, 1991, p. 184).

It is not possible to overstate the influence of media, specifically television, in the lives of adolescents today. If you want to know what influences our youth, turn on the television. Four of the five study participants indicated that videos or television somehow influenced their environmental attitudes and behaviors. Commercials caught their attention, while videos and television specials increased their environmental knowledge. Robert commented, " . . . sometimes I watch National Geographic specials . . . I watch them because I want to know about animals and how they live". Jane was aware of the emotion stimulated through watching videos. "We watched movies that made me feel guilty that I wasn't doing enough . . . they showed people who do so much to help the environment", she wrote. Clearly, media has the potential of influencing our children either positively or negatively - it all depends what message is presented.

Summary

Chapter V has presented the meaning of change in adolescent environmental attitudes and behavior using the voices of the adolescents themselves. For each, direct experience in the natural environment was a significant influence. In nature they are open to the world around them. They are present in the moment, and able to learn through firsthand experience. This connectedness through experience constructs learning situations students deem meaningful. These are the experiences that stir emotions and shape memories. Chapter VI discusses qualitative research in environmental education, reflects on this study, and concludes with recommendations which may be helpful for environmental educators in the future.

CHAPTER VI

DISCUSSION, REFLECTIONS, AND RECOMMENDATIONS

Discussion: The Need For Qualitative Research In Environmental Education

In an attempt to bring deeper meaning to the aspect of change in adolescent environmental attitudes and behavior this study has relied on the attributes of human science research. Qualitative approaches offered a deeper understanding of human experience based on individual perceptions and perspectives. This thesis has attempted to highlight change in the environmental attitudes and behaviors of grade eight students participating in the new junior high environmental and outdoor education program.

One cannot share in the learning of children and not be moved. Throughout the process of this research and my interaction with the participants in this study I have realized what an enormous impact we have had on one another. Qualitative research has provided me with the opportunity of truly getting to know these kids, and given me a chance to share in their experiences.

Reflections

Much of what has come out of this research is not surprising considering existing models of adolescent growth and development. Changes in environmental attitudes and behavior are inextricably linked with changes in values and beliefs. These changes are personal, situational, and largely dependent on an individual's self-esteem. By looking at the common themes we can learn something of the factors which effect environmental attitudes and behaviors. Acting in a positive environmental regard is enhanced when individuals willingly accept personal responsibility for the Earth. Unfortunately, responsibility is bound to consistency - herein lies the problem. Regardless of intent, external influences such as peer pressure seem to hinder the consistency of one's actions.

It is impossible to claim responsibility for behavior that remains unassessed. Reflecting on experience is an important aspect of everyday life. It is not the experience that teaches us, or improves our performance, it is the reflection on that experience that provides the inherent meaning. It is my perception that convenience also plays a large role in encouraging positive environmental action. If it is convenient to behave in an environmentally friendly manner, most of us do. If we must go out of or way , or make changes in our own lifestyles in order to accommodate positive behavior, old habits usually win out.

Previous involvement in environmentally friendly practices appears to encourage future environmental responsibility. This could be attributed to knowledge of environmental problems/issues and knowledge of the skills/strategies for solving these problems, practice participating in positive environmental action, or just the formation of good habits. Parents who acted as positive environmental role models encouraged their children to adopt good environmental habits. Moreover, families who spent time together in direct contact with nature positively influenced their children's appreciation of, and responsibility for, the environment. Perhaps the responsibility for teaching moral education should remain in the hands of the family and not be considered as a curricular responsibility.

Throughout the process of doing this research I have continually been reminded of the impact created by experiential learning opportunities which occur in direct contact with nature. It brings challenge, meaning, and fun to the forefront of the learning experience and students deem it significant. If we want to improve the environmental attitudes and behaviors of our youth, we must include the use of classrooms without walls, and we must provide them with firsthand learning experiences.

Media plays a large role in influencing the environmental attitudes and behaviors of adolescents This can be a positive or negative influence depending on what is presented. There is capacity here to do a great deal of good, especially with respect to presenting environmental knowledge. I am not suggesting that media become the basis for instruction, merely that it has its place, if used sparingly and appropriately.

A Personal Note . . .

What I most remember when I look back to my own adolescence is an opportunity I had to go rock climbing with my grade twelve outdoor education class. I remember clinging to the rock face some 20 feet above the ground, it was evening, and my fingers were cold. Below me I heard shouts of encouragement saying, "keep going, you're doing great!" All of a sudden I was standing alone on the top of the cliff. I stood there by myself, my hands numb with cold, my heart pounding, and I felt like I had conquered the world. I looked out over the valley below me and felt a sense of belonging - I knew this place. It had become significant. As we grow older, experiences such as these form the memories through which we evaluate our lives. They affect the way we look at the world, and they affect our actions towards the Earth - at least, they affected mine.

Recommendations

This study has looked at the formation and change of environmental attitudes and behaviors of grade eight students participating in the new junior high environmental and outdoor education program. These findings may be of use to those developing and implementing the new course of studies and may be applied to other environmental education programs of a similar nature. From the perspective of both researcher and educator I have included a list of recommendations which might be of benefit.

1. As much as possible take the students outside.
2. Find out what outdoor activities your students consider meaningful and try to use as many of them as you can within your program.
3. Recruit parent/community involvement in your program. Parents can be used as much more than chaperones. Find out where their expertise lies and make use of it.
4. Spend more time educating at the empowerment level. Environmental awareness and knowledge are not enough; teach them what to do with the knowledge.
5. Make use of state of the art media which educates towards positive environmental attitudes and behavior.

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APPENDIX 1

APPENDIX 1

INFORMED CONSENT FORM

Researcher:	*Carol Sherlock*	*Telephone:*	*433-3245*
Supervisors:	*Harvey Scott Ph.D.* *Wallie Samiroden Ph.D.*	*Telephone:*	*492-7173* *492-3676*

In 1990, environmental and outdoor education was introduced to the Alberta curriculum at the junior high school level. Its aim supported that of Alberta Education: "to develop the knowledge, the skills, and the positive attitudes of individuals so that they will be self-confident, capable and committed to setting goals, making informed choices, and acting in ways that will improve their lives and the life of their community" (Alberta Education, 1991, p. 3). Through programs such as this, meaningful and relevant learning experiences are created for the learner and opportunities designed for students to bridge classroom learning with their everyday lives. This project proposes to explore the new course of studies in order to understand what factors influence the formation and change of the environmental attitudes and behaviors of grade eight students. Your assistance and co-operation in this important project is essential if we are to achieve our goal.

I will collecting this data personally. The results will in no way be used in the grading of this course and all data will be kept in complete confidence. Only I will see the individual results.

With this anonymity and complete detachment of course grades from the study we sincerely hope that you will participate in the study openly and honestly. Your involvement in the project is completely voluntary (and reliant on parental consent) and allows you to decline to enter or withdraw at any time without consequences.

Such a commitment from you will involve completing a thirty to forty-five minute tape recorded interview. As well, you will be expected to keep an honest and open personal journal reflecting on both course and daily life experiences for the duration of the environmental and outdoor education program. I will be joining you during your environmental and outdoor education class for the purpose of video taping class activities and group interviews, and to better understand your experience.

The personal and group interviews, your journals, and my classroom experience with you will enable us to better understand how environmental attitudes and behaviors are formed and changed in grade eight students. I will be using your feedback for my Masters thesis to help environmental educators across Alberta to develop more powerful and successful environmental and outdoor education programs. Most importantly, your involvement in this project will help you reflect on your current environmental attitudes and behavior.

Please feel free to contact me should you have any questions about the procedures for this study.

Thank you in advance for your assistance.

With sincere and grateful appreciation,

Carol Sherlock
Coordinator

INFORMED CONSENT

I have read this form and I understand the extent of my involvement in the study. I understand that I am free to withdraw from this project at any time without consequence. I freely consent to participate in this research and acknowledge receipt of a copy of this consent form.

Date: ____________________

Signature of student: ________________________

Signature of Parent/Guardian: ________________________

Signature of Witness: ________________________

Signature of Investigator: ________________________
Carol Sherlock

APPENDIX 2

APPENDIX 2

SHARING CIRCLE TRANSCRIPTS

1. Why did you take this course?

Jenni:	I took this course because where I used to live the teacher said it was going to be fun.
B.J.:	I took this course because I liked it last year, and I don't like staying inside in school time.
Robert:	I took this course because it was fun last year.
Joshua:	I took this course because it was fun.

2. What does environmental education mean to you?

B.J.:	Environmental education is learning about the place I live, and learning how to take care of it.
Robert:	I think it is learning about the environment and spending some time during class in it.
Joshua:	I think that it is learning about the environment and the things that are in it.
Jenni:	I think it's learning about the environment and co-operation.

3. What sort of outdoor activities do you participate in?

Robert:	I like street hockey, football, basketball, fishing, camping and climbing.
Joshua:	I like riding my bike and going for walks.
Jenni:	I like to go camping and bike riding.
B.J.:	I like doing sports that have to do with the outdoors, I like fishing and being on the lake houseboating.

4. Where do you go to participate in them? Who do you go with?

B.J.: I like going to Vancouver, because I like the ocean and I like the scenery there. I go with my family.

Robert: I will go anywhere I can quad, fish, or camp.

Joshua: I like going to the mountains, because there are lots of trees and different plants.

Jenni: I like to go to B.C., because there are lots of mountains, hills, and trees.

5. *In your opinion, what are the major environmental problems facing society today?*

Robert: I think pollution and the deteriorating of the ozone is, and burning of the rain forest.

Joshua: I think some problems have to do with the rain forest destruction and the ozone layer.

Jenni: Some of the problems I think are pollution and not enough people recycle.

B.J.: I think our problem is mainly how society lives. They are just careless and they're not doing what they are supposed to be doing. If we don't clean up our attitudes soon we will become extinct.

6. *Where does your garbage go?*

Robert: I'm not sure.

Joshua: I imagine it goes to a dump somewhere.

Jenni: I think it goes to a landfill.

B.J.: Depends on what kind of garbage you're talking about. If it's compost and grass clippings and stuff it goes into the ravine; we're making a big hill in the backyard. We recycle and put our recycling in the recycle box, and the other garbage goes to the Cloverdale, whatever it's called, landfill site. Some of our garbage is probably dumped into the ocean and some of it that we put in landfills seeps through the bottom of the landfill site and goes into the little streams that are going underneath it and eventually ends up in our lakes and kills our fishes.

7. What sort of plants, birds, and animals live in your neighborhood?

Robert: We have mainly dogs and cats in our neighborhood, and we grow strawberries in our yard.

Joshua: Trees and plants and flowers . . . cats, dogs, . . . and they're are probably mice around somewhere.

Jenni: Trees and cats and dogs and lots of different flowers.

B.J.: I live by the ravine so I have deer, moose . . . we've seen a fox in our backyard and porcupines and squirrels . . . there's a dog next door and a dog on the other side of our house . . . and I used to have a rabbit, but it ran away . . . spruce trees . . . that's about it.

8. Were the stars out last night?

Robert: I didn't see the moon, but I think the stars were out . . . I don't know.

Joshua: I didn't look up, so I don't know.

Jenni: I didn't look up.

B.J.: When I was watching t.v. I looked outside, I saw the moon and it was really big.

9. What wild flowers are among the first to bloom in this area?

Joshua: Maybe a wild rose, dandelions . . . I don't know.

Jenni: I haven't been out much because of my back surgery, so I have no idea.

B.J.: I don't know much about plants and flowers, so I don't know which flowers came out first.

Robert: The only wild flowers that grow around us are dandelions.

10. What natural resources does Alberta produce?

B.J.: Water.

Robert: I think mainly oil.

Joshua: Oil, and maybe lumber.

11. What environmentally friendly activities are part of your everyday life?

B.J.: I tell my friends to clean up their garbage, but they never do, so I pick it up myself.

Robert: I recycle, put garbage in the garbage cans, and go for walks.

Joshua: I recycle and I try not to buy over-packaged stuff.

Jenni: I tell people to pick up their garbage.

12. You mentioned using products that were labelled environmentally friendly; how do you feel about "green labels" being put on items that might not be environmentally friendly?

B.J.: It makes me mad.

Robert: They should be either fined or sued.

Joshua: I think that there should be some sort of law against that. You should have to be able to prove that your product is environmentally friendly.

Jenni: I think the company should be fined.

B.J.: I have a comment . . . It might cost too much money for the company so they might not want to do that . . . and I would like to change the subject and say something about those Green Peace people . . . I can understand some of the stuff they're doing . . . like trying to stop the cutting down of most of the rain forest, but some of it has to be cut down for jobs and for industry . . . otherwise people will lose their jobs and

> then people will be living on the streets and will be dying . . . the people who are trying to stop the people up north to stop hunting seals . . . if they don't hunt seals the people up there will lose their jobs and they will have no life whatsoever.

APPENDIX 3

APPENDIX 3

JOURNAL QUESTIONS

1. What have you learned about being environmentally active/responsible from this course experience. Please give examples.

2. What activity was the most meaningful for you? Why?

3. How do you feel about your personal relationship with the Earth? Think about your behavior and the consequences of it. Do you feel that you have the power to make changes in your own life? Why, or why not?

4. What factors do you feel influence your taking or not taking positive environmental action? Please give examples.

5. What have you done today that is good for the Earth? Please share some examples.

6. What was your most favorite part of the camp? Why?

7. What was your least favorite part of the camp? Why?